

XR-7200

SERVICE MANUAL

*US Model
Canadian Model
AEP Model
E Model*



SPECIFICATIONS

Cassette player section

Tape track 4-track 2-channel stereo
Frequency response 30 – 18,000 Hz

Signal-to-noise ratio (A-weighted)

Cassette type	Dolby B	Dolby C	Dolby off
TYPE II, IV	66 dB	76 dB	58 dB
TYPE I	63 dB	73 dB	55 dB

Wow and flutter 0.1% (WRMS)

Tuner section

FM

Tuning range US, Canadian model:
87.9 – 107.9 MHz
AEP, E model:
87.5 – 108.0 MHz
Antenna terminal External antenna connector
Intermediate frequency 10.7 MHz
Usable sensitivity 12 dBf (75 ohms)
Sensitivity at 50 dB quieting 18 dBf (75 ohms)
Selectivity 75 dB at 400 kHz
Signal-to-noise ratio 65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz 0.5% (stereo), 0.3% (mono)
Separation more than 30 dB at 1 kHz
Frequency response 30 Hz – 15,000 Hz
Capture ratio 2 dB

AM

Tuning range US, Canadian model:
530 – 1,620 kHz
AEP, E model:
531 – 1,602 kHz
(at 9 kHz step)
530 – 1,620 kHz
(at 10 kHz step)
Antenna terminal External antenna connector
Intermediate frequency 450 kHz
Sensitivity 35 μ V

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MG-55-31

General

Output lead Power antenna relay control lead
Tone controls Bass ± 10 dB at 100 Hz
Treble ± 10 dB at 10 kHz
Loudness +7 dB at 100 Hz
+7 dB at 10 kHz
Power requirements 12 V DC car battery (negative ground)
Dimensions (without bracket) Approx. 178 $\times$ 50 $\times$ 153 mm
(w/h/d)
(7 $\frac{1}{8}$ $\times$ 2 $\times$ 6 $\frac{1}{8}$ inches)
not incl. projecting parts and controls
Mounting dimensions (without bracket) Approx. 182 $\times$ 53 $\times$ 145 mm
(w/h/d)
(7 $\frac{1}{4}$ $\times$ 2 $\frac{1}{8}$ $\times$ 5 $\frac{3}{4}$ inches)
not incl. projecting parts and controls
Weight Approx. 1.9 kg (4 lb 3 oz)
Accessories supplied Mounting hardware (1 set)
3.15-ampere fuse (1)

Dolby noise reduction manufactured under license from
Dolby Laboratories Licensing Corporation.
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Dolby Laboratories Licensing Corporation.

FM/AM CASSETTE CAR STEREO
SONY®

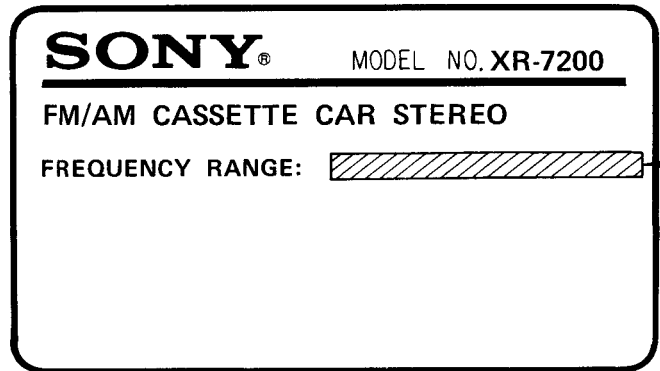


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MODEL IDENTIFICATION

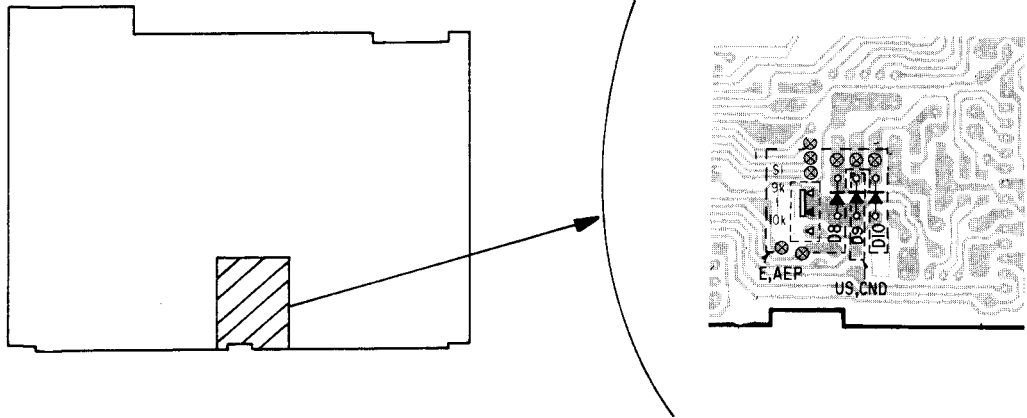
— Specification Label —



US, Canadian model: FM 87.9–107.9 MHz
AM 530–1620 kHz
E, AEP model: FM 87.5–108 MHz
AM 531–1602 kHz with 9 kHz spacing
AM 530–1620 kHz with 10 kHz spacing

NOTE ON REPLACEMENT OF MAIN BOARD FOR E, AEP MODEL

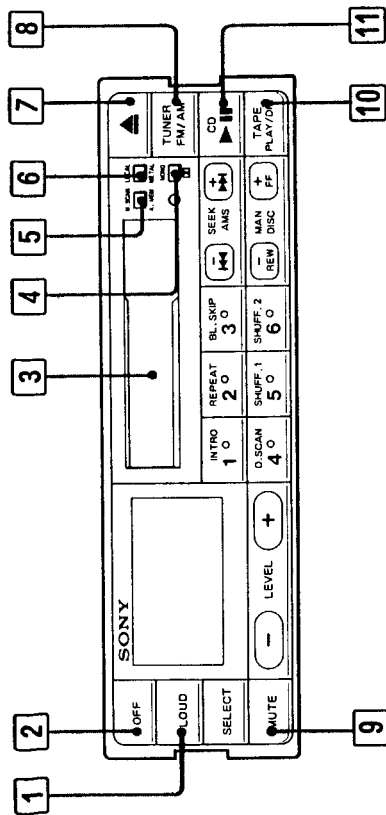
[MAIN BOARD] (Conductor Side)



On replacement of Main board for E, AEP model, remove D9 from the new board.
And remove S1, D8, and D10 from the old one, then mount these components on the new on.

SECTION 1
GENERAL

Location and Function of Controls

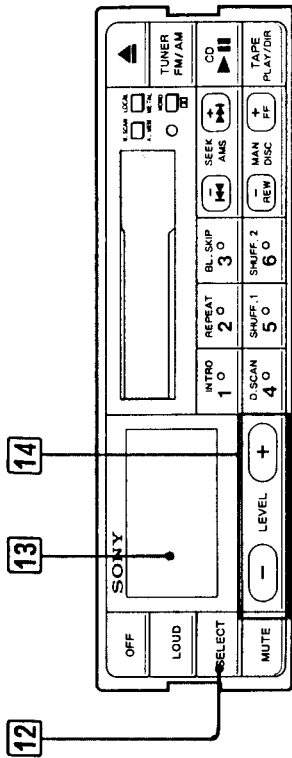


Refer to the page in ● for details.

- 1 **LOUD (loudness) button**
Press to reinforce bass and treble especially when listening at low volume. To disengage the button, press it again.
- 2 **OFF (power off) button**
Press to turn off the unit.
- 3 **Cassette insertion door**

	During radio reception	During tape playback
4	MONO (monaural) button 7	 button 7
5	M. SCAN (memory scan)/ A. MEM (automatic memory) button 8	—
6	LOCAL button 7	METAL (metal/CrO₂) button 7

- 7 **(eject) button**
- 8 **TUNER FM/AM (radio on/band select) button**
- 9 **MUTE button**
Press to momentarily mute the sound. Press again to restore the same sound level as before.
- 10 **TAPE PLAY/DIR (tape playback/transport direction change) button 7**
- 11 **CD button 8**

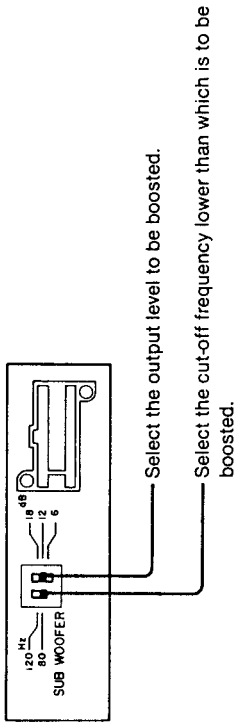


- 12 **SELECT (control mode select) button**
Press to select the desired control mode, BAS (bass), TRE (treble), BAL (balance), FAD (fader), or VOL (volume).
- 13 **Display window**
- 14 **LEVEL (volume/tone/balance control) button**
LEVEL button normally functions as the volume control. Adjust the level within three seconds after selecting the desired control mode. Otherwise, the mode goes back to the volume control mode.

Display window	Control mode	Press	LEVEL	Press	
BAS	Bass control	For less bass	For more bass		
TRE	Treble control	For less treble	For more treble		
BAL	Balance control	To decrease the right-speaker volume	To decrease the left-speaker volume		
FAD	Fader control	To decrease the rear-speaker volume	To decrease the front-speaker volume		
VOL	Volume control	For less volume	For more volume		

When Connecting the Sub-woofer Speaker System

The SUB WOOFER output is provided for the powerful bass reproduction. When you connect the power amplifier for the sub-woofer speaker system with this unit, set the SUB WOOFER switches on the rear to the appropriate positions.



For the detailed information on connections, see the supplied installation/connections manual.

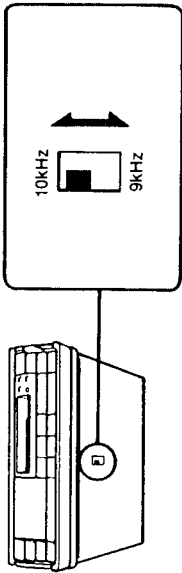
Note on AM Tuning Interval
(Except for the US model and the Canadian model)

The interval is factory-set to 9 kHz.
If, however, AM frequency allocation might be different from that in the area this car stereo is used, change the AM tuning interval or consult the nearest Sony dealer.

9 kHz area	AEP, E model
10 kHz area	US model

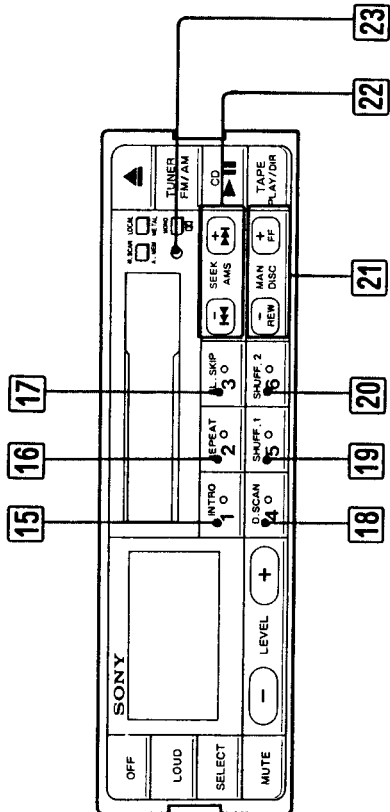
To change the AM tuning interval

- 1 Remove the main unit from the bracket.
- 2 Set the AM tuning interval selector at the bottom of the unit to the proper position. Use a ball-point pen or a similar object.



- 3 Install the main unit to the bracket.
- 4 Press the reset button.

Location and Function of Controls



	During tape playback	During disc play	During radio reception
15	INTRO button 7 9		
16	REPEAT button 11		
17	BL. SKIP (blank skip) button 7		Preset number buttons 8
18	—	D. SCAN (disc scan) button 9	
19	—	SHUFF. (shuffle) 1 button 9	
20	—	SHUFF. (shuffle) 2 button 9	
21	FF/REW (fast forward/rewind) button 7	DISC (disc change) button 8	MAN (manual tuning) button 8
22	AMS* button		SEEK (automatic tuning) button 7

Reset button

Press this button when no other button functions.

Note: Mute function, intro play, repeat play, disc scan, and shuffle play (1 and 2) will be cancelled when you press OFF button or when you keep the ignition key set to the off position for more than eight seconds. Blank skip function will be maintained until you press BL. SKIP button again.

*Automatic Music Sensor

Supplied Mounting Hardware

The numbers in the list are keyed to those in the instructions.

①	②	③	④	⑤	⑥
					
x 1	x 1	x 1	x 1	x 1	x 1
	3-302-126-01	7-682-579-04	7-684-025-04	3-323-210-01	3-323-208-01

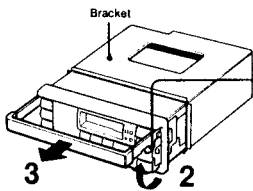
Installation

Precautions

- Choose the mounting location carefully so that the unit will not interfere with the normal driving functions of the driver.
- Avoid installing the unit where it should be subject to high temperatures, such as from direct sunlight or from hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

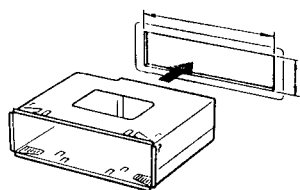
1

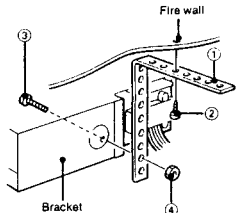
Remove the Unit from the Bracket.



2

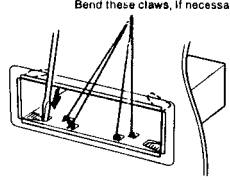
Install the Bracket in the Dashboard.

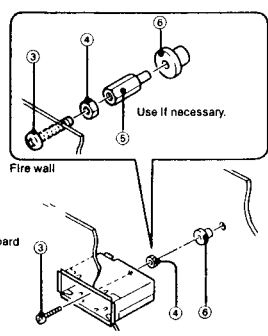
1


3


2

Bend these claws, if necessary.

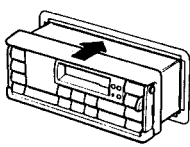


Example


Use if necessary.

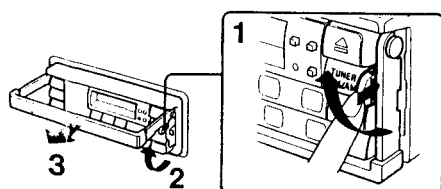
3

Secure the Unit.



Push in the unit until it is locked firmly.

To Remove the Unit



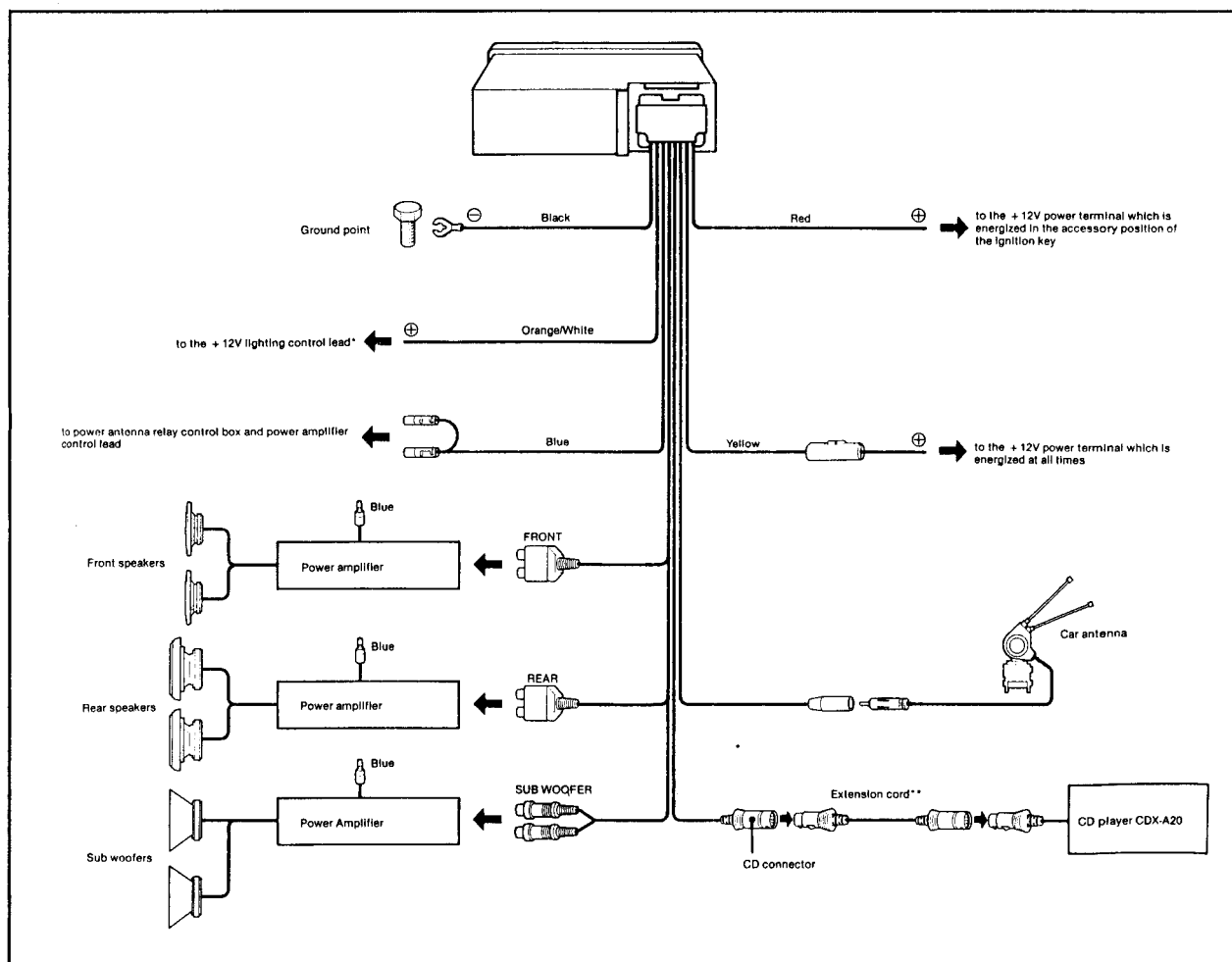
To prevent the unit from being stolen
When you leave your car, remove the
unit from the bracket and take it away
with you.

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the red power input lead only after all other leads are connected. And be sure to connect it to the positive 12 V power terminal. It will be energized when the ignition key is set to the accessory position.
- Run all ground wires to a common ground point.

Connection Diagram



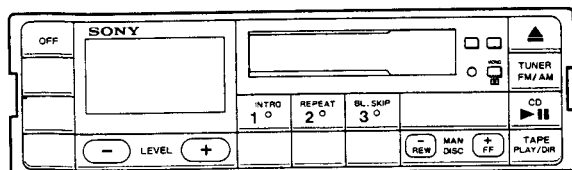
*When you turn on the sidelights of the car, the display window becomes dimmer than before. If you want to keep it bright, press D SCAM while pressing SELECT. Press these buttons again to make it dim.

**Optional in the United States and Canada. In other countries, supplied with CDX-A20.

Note: A power antenna without relay box cannot be used with this unit. For details about the power antenna, refer to the power antenna instruction manual.

After completing the connections, press the reset button of this unit.

Tape Playback



- 1** Insert a cassette to start playback.
- 2** Press to adjust the volume.

Other Operations

To rewind or fast-forward the tape		To stop the tape and listen to the radio	
To listen to the other side of the cassette		To stop the tape and start the disc play	
To take out the cassette		To play back the tape again	
		To stop the tape and turn off the unit	

To select the tape type

Tape type	
CrO ₂ (TYPE II)	Press LOCAL/METAL once to engage the button.
Metal (TYPE IV)	Press LOCAL/METAL twice to disengage the button.
Normal (TYPE I)	

Listening to Dolby NR-processed Tapes

Press Select Dolby B or Dolby C. Select the same Dolby NR system used for the recorded cassette. Dolby NR (Noise Reduction) system reduces tape hiss noise in low-level, high-frequency signals.

Locating the Beginning of a Desired Selection during Playback (AMS Function)

To locate the beginning of the selection being played	Press
To locate the next selection	Press

Listening to the Beginnings of Selections in Order (Intro play)

Press First ten seconds of each selection will be played back in order from the next selection. Press again to release it. (during tape playback)

Repeating the Selection Being Played (Repeat play)

Press The unit goes back to the beginning of the selection when the selection ends.

Skipping the Long Blank (Blank skip function)

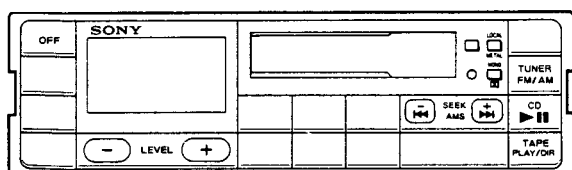
Press The unit skips the long blank (more than eight seconds) automatically and plays back the next selection. Press again to release this function.

Side of the cassette being played back

This unit plays back both sides of the cassette repeatedly. The indicator on the display window shows which side of the cassette is being played back.

Indicator	Side
	The side facing upward
	The side facing downward

Automatic Tuning



- 1** Press to turn on the unit.
- 2** Press to select the desired band, FM1, FM2 or AM
- 3** Press to start scanning.
 - For lower frequencies
 - For higher frequencies

The scanning automatically stops when a station is tuned in.

Repeat this step until the desired station is tuned in.
- 4** Press to adjust the volume.

Other Operations

To stop the radio and start tape playback

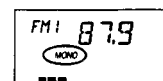
When no cassette is inserted	
When a cassette is inserted	

To stop the radio and...

To start disc play	
To start disc play	

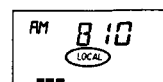
When the FM stereo program is too weak and noisy

Press The noise will be reduced. The sound will be monaural instead.

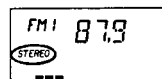


When the broadcast is noisy due to the interference from adjacent strong stations

Press The noise will be reduced.

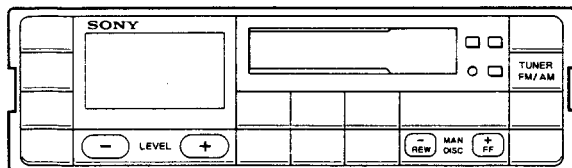


When an FM stereo program of sufficient signal strength is tuned in



The program is automatically received in stereo.

Manual Tuning



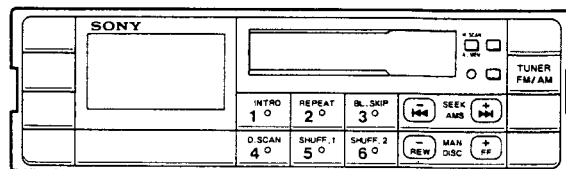
- 1** Press to turn on the unit.
- 2** Press to select the desired band.
- 3** Press to select the desired station.
 For lower frequencies
 For higher frequencies
 To change the frequency rapidly. Keep the button pressed.
- 4** Press to adjust the volume.

Warning
While driving, keep your eyes on the road and use the automatic tuning or the memory preset tuning!

Memory Preset Tuning

You can memorize a total of 18 stations (6 stations for each band), one on each preset number.

Memorizing the Stations Automatically (Automatic Memory Function)



- 1** Press to turn on the unit.
- 2** Press to select the desired band.
- 3** Press for more than two seconds.
 The unit starts scanning the selected band and memorizes the tuned stations on the preset number buttons 1 through 6 automatically in the order of the stronger station.

Surveying What is Being Broadcast on the Preset Stations

- Press Each memorized station will be scanned for five seconds in order. (When the broadcast of the memorized station is too weak, it cannot be received.)
-

Automatic Tuning

Memorizing Only the Desired Stations Manually

Example: To memorize on the preset number 1

- 1** Press to turn on the unit.
- 2** Press to select the desired band.
- 3** Press to tune in the desired station.
 OR
- 4** Press for more than two seconds.
 The number of the pressed preset number button will be displayed. MEM indicator appears to show that the station has been memorized. (MEM indicator will disappear in a few seconds.)

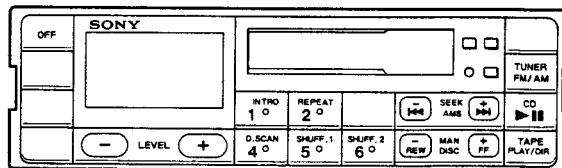
Repeat these steps for each station.

To Receive the Preset Station

- 1** Press to select the desired band.
- 2** Press lightly to receive the desired station.

Important
Every preset number button has only one memory for a band. The previously memorized station will be erased when you enter a new station of the same band on the same preset number button.

Disc Playing (When the optional compact disc player CDX-A20 is connected)



Before operating, insert a disc magazine with discs in it into CDX-A20.

- 1** Press to start the disc play.
- 2** Press to adjust the volume.

Other Operations

- To listen to another disc in the disc magazine
- To pause during play
- To start again

To stop disc play and start tape playback

- When no cassette is inserted
- When a cassette is inserted

To stop disc play and...

- To listen to the radio
- To turn off the unit

Disc Playing

Locating the Beginning of a Desired Selection during Disc Playing (AMS Function)	
To locate the beginning of the selection being played	Press 
To locate a previous selection	Keep pressing  Release the button at the desired selection.
To locate the next selection	Press 
To locate a selection ahead	Keep pressing  Release the button at the desired selection.

When the first selection or the last selection of the disc is located, the play begins from the selection.

Various Plays	
To listen to the beginnings of the selections in order (Intro play)*	Press  First ten seconds of each selection on every disc will be played in sequence from the next selection.
To repeat the selection being played (Repeat play)	Press  The unit goes back to the beginning of the selection when the selection ends.
To search for the desired disc (Disc scan)	Press  First ten seconds of the first selection on each disc will be played in sequence.
To play the selections on the disc in a random order (Shuffle play 1)*	Press  All the selections on a disc being played will be played in a random order. After playing all the selections on the disc, the unit goes to the next disc.
To play the selections on all the discs in a random order (Shuffle play 2)*	Press  All the selections on all the discs in the disc magazine will be played in a random order.

To resume normal playback
Press each button again.

*When you press the INTRO button during the shuffle play (1 or 2), the first ten seconds of all the selections will be played in a random order.

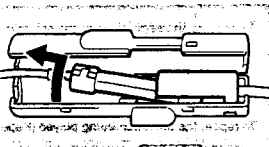
MEMO

Maintenance

Fuse Replacement

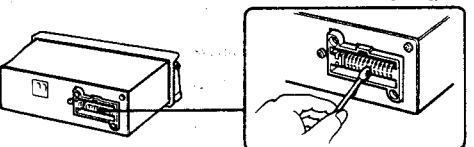
If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In this case, consult your nearest Sony dealer.

Warning
Use the specified ampere fuse for each lead.
Use of a higher ampere fuse may cause serious damage.



Cleaning the Connector

To keep the best possible sound quality, clean the metallic part of the connector at the rear of the unit periodically using a commercially available head cleaning fluid or rubbing alcohol and a cotton swab.



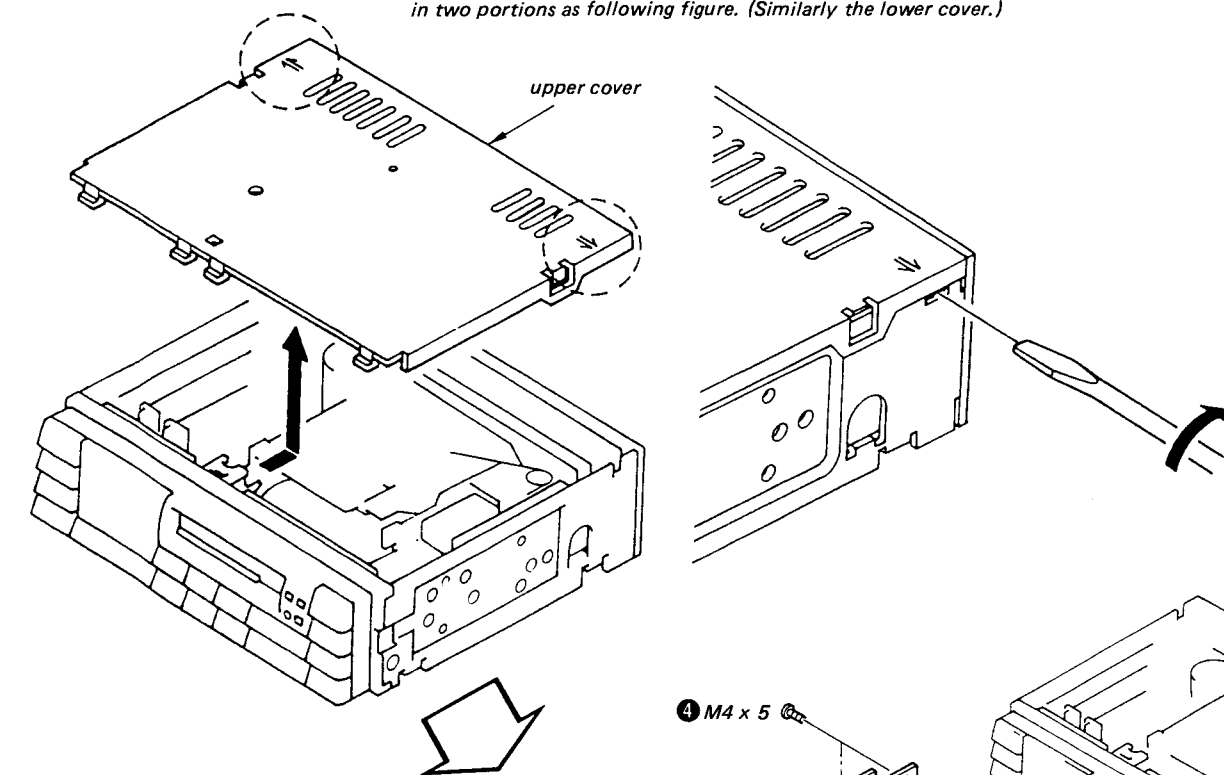
Cleaning the Head and Tape Path

Prolonged use may contaminate the tape head and the tape path. Contamination causes sound drop-outs in playback. Clean the tape head and tape path every two weeks to enjoy optimum hi-fi stereo sound. Use a commercially available cleaning cassette.

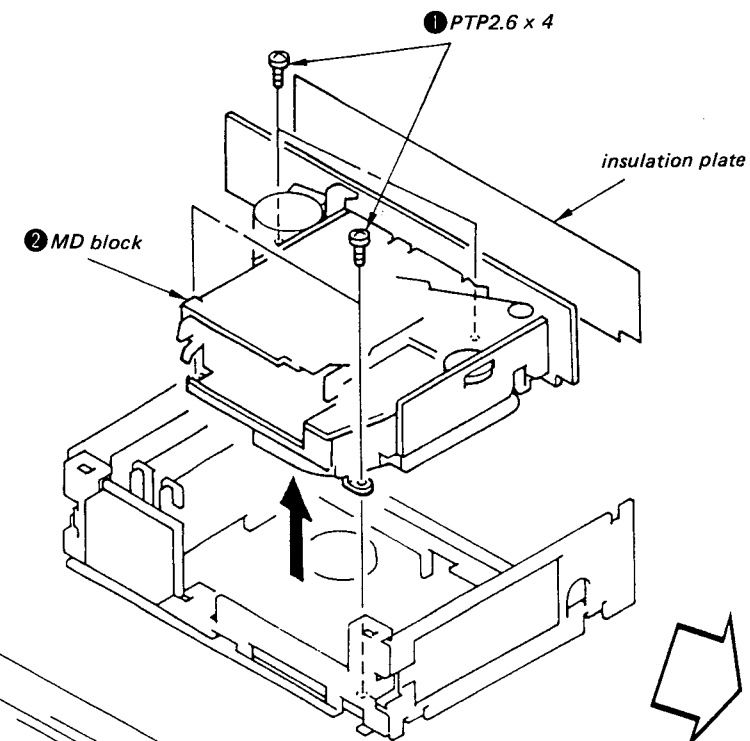
SECTION 2 DISASSEMBLY

COVER

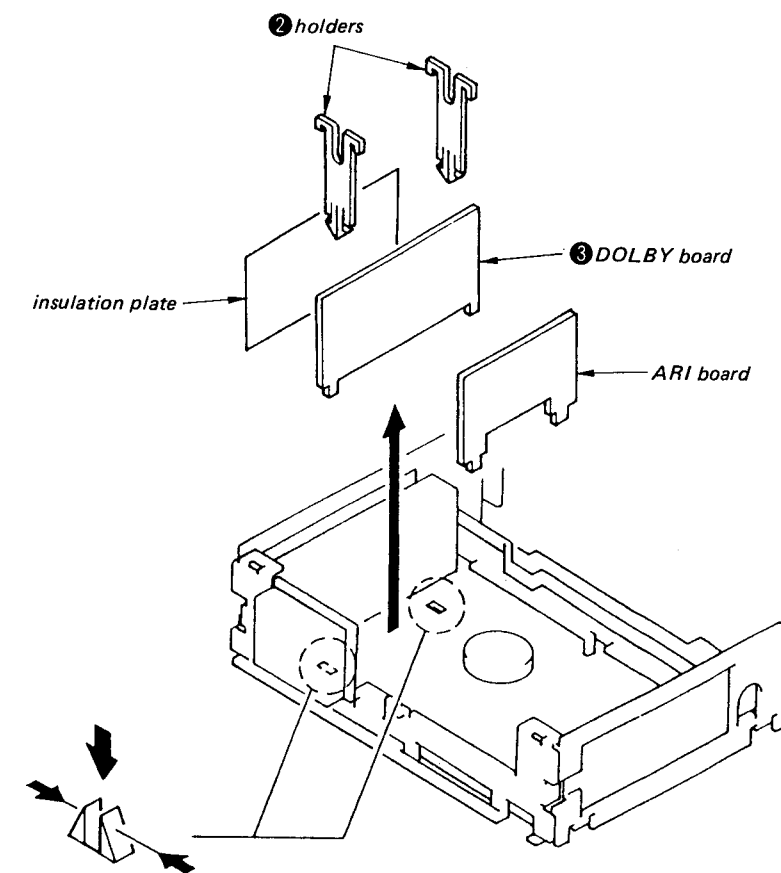
Remove the upper cover by inserting such as screw drivers in two portions as following figure. (Similarly the lower cover.)



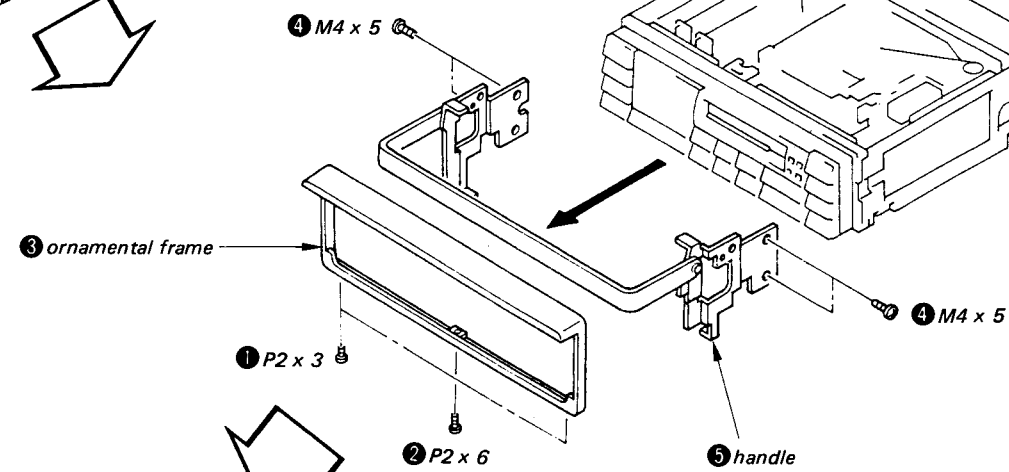
MD BLOCK



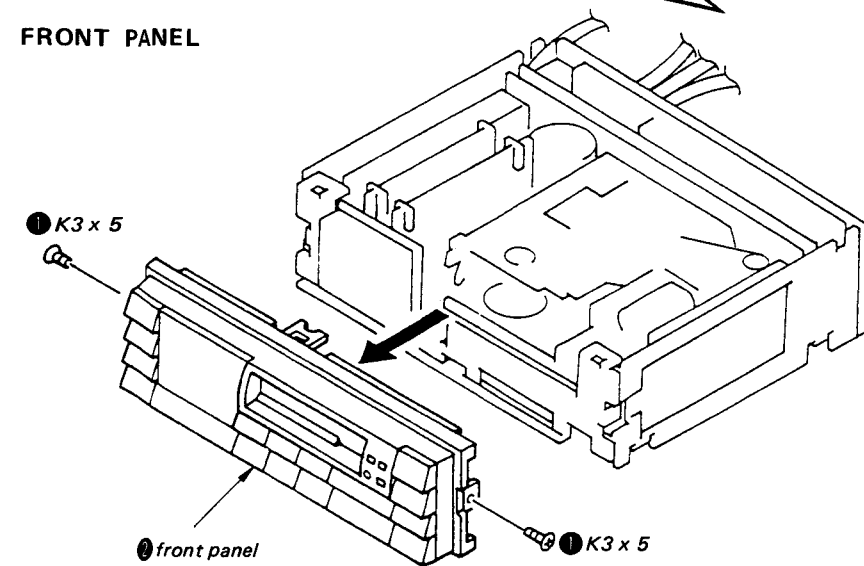
DOLBY BOARD



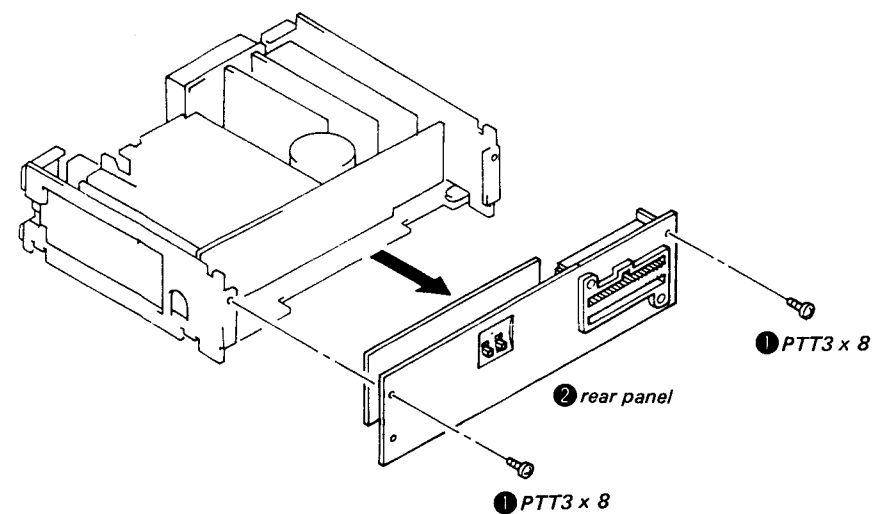
HANDLE



FRONT PANEL



REAR PANEL



Remove the claw (two portions) on the bottom.

SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:

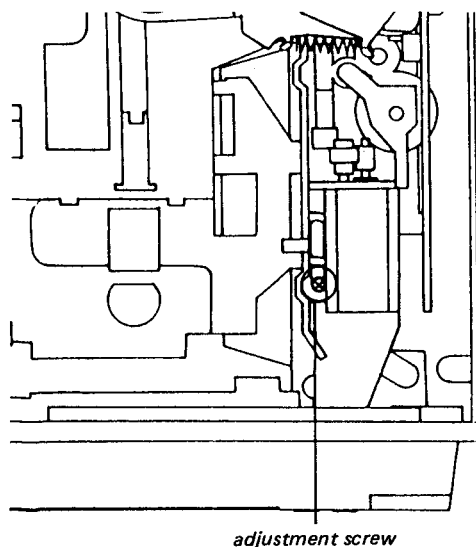
PB head	Pinch roller
Idler	Rubber belt
Capstan	
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4 V).

Torque Measurement

Measure the torque at a supply voltage of 14.4 V DC.

	Torque meter	Meter reading
FWD	CQ-102C	25 to 55 g·cm (0.35 to 0.77 oz·inch)
FF, REW	CQ-210B	55 to 150 g·cm (0.77 to 2.1 oz·inch)
Back tension	CQ-102C	1.5 to 4 g·cm or less (0.02 to 0.05 oz·inch or less)

Adjustment Location:

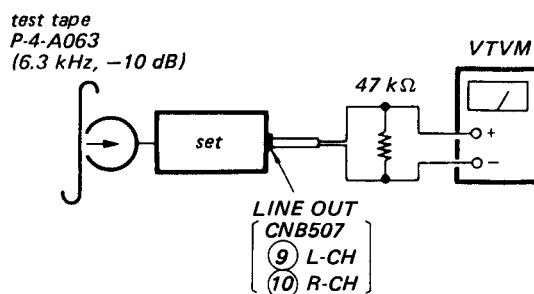


3-2. ELECTRICAL ADJUSTMENTS DECK SECTION

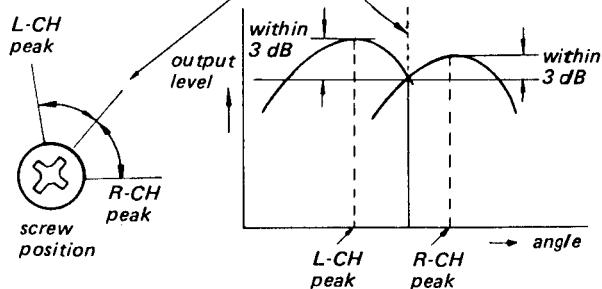
PB Head Vertical Adjustment

Proceudre:

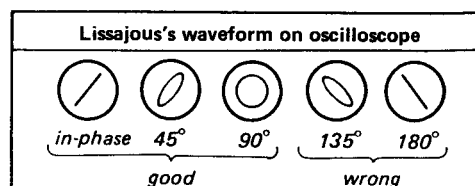
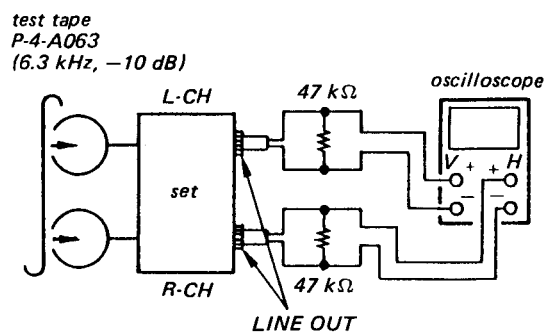
1. Put the set into the FWD PB mode.



2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 3 dB.



3. Check the phase in the PB mode.

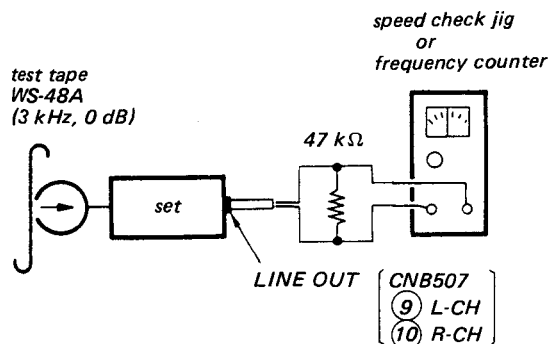


4. Repeat the above adjustment for the PB REV mode.

Capstan Motor Tape Speed Adjustment

Procedure:

1. Put the set into the FWD PB mode.

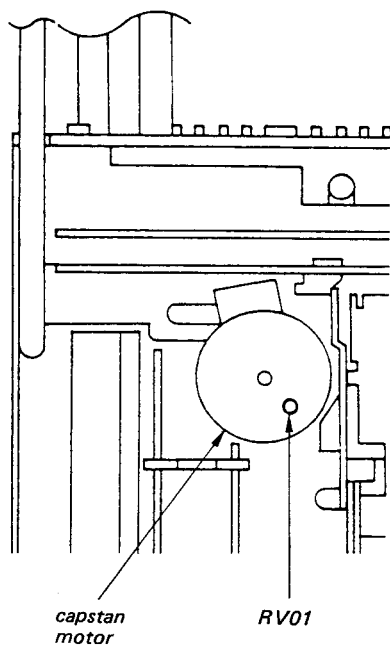


Specification: Constant speed

Speed check jig	Frequency counter
-1 to +2%	2,970 to 3,060 Hz

Adjust so that the frequency difference between the FWD and REV modes is within 1.5% (45 dB).

Adjustment Location: RV01

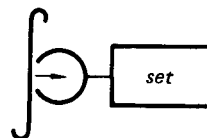


DOLBY NR Level Adjustment

Setting:

DOLBY NR switch: OFF
METAL switch: OFF

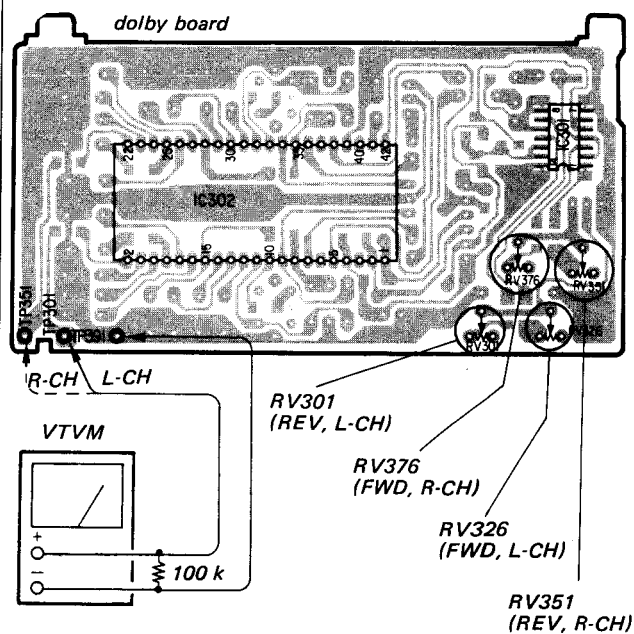
test tape
P-4-D400
(400 Hz, 0 dB)



Procedure:

1. Put the set into the FWD PB mode.
2. Adjust RV326 (L-CH) and RV376 (R-CH) so that VTVM reading is 0.245 V (-10 dB).
3. Put the set into the REV PB mode.
4. Adjust RV301 (L-CH) and RV351 (R-CH) so that VTVM reading is 0.245 V (-10 dB).

Adjustment Location: dolby board



TUNER SECTION

Cautions during repair

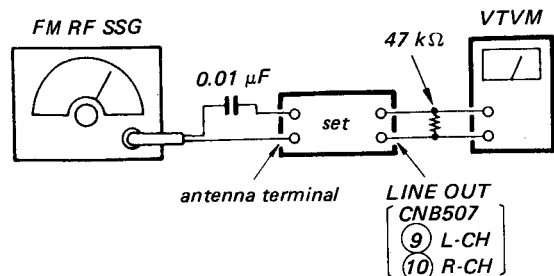
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

FM Stereo Separation Adjustment

Setting:

Band switch: FM
MONO switch: OFF (STEREO)

Procedure:



Carrier frequency: 98.0 MHz (AEP, E model)
98.1 MHz (US, Canadian model)
Output level: 1 mV (60 dB)
Mode: stereo
Modulation: main channel; 1 kHz, 33.75 kHz deviation (45%)
pilot signal; 19 kHz, 7.5 kHz deviation (10%)
subchannel; 38 kHz, 33.75 kHz deviation (45%)

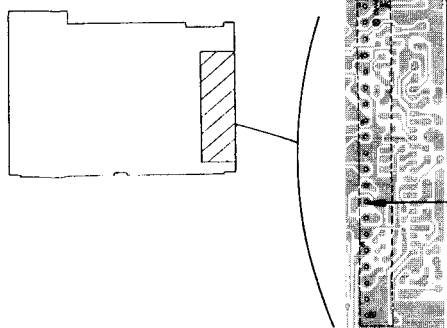
FM stereo SSG output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	(A)
R-CH	L-CH	(B) Adjust RV101 so that VTVM reading is minimized.
R-CH	R-CH	(C)
L-CH	R-CH	(D) Adjust RV101 so that VTVM reading is minimized.

L-CH stereo separation: (A) - (B)

R-CH stereo separation: (C) - (D)

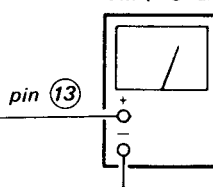
The separation in the two channels should be almost the same.

[MAIN BOARD] (component side)



tuner unit (FE101)

VOM (DC range)

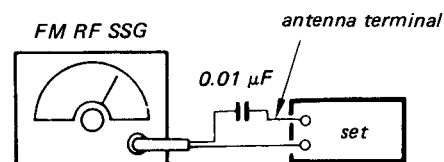


FM and AM auto scan/stop level adjustment VOM is connected as illustrated.

FM Auto Scan/Stop Level Adjustment

Setting:

Band switch: FM
MONO switch: ON
Frequency: 98.0 MHz (AEP, E model)
98.1 MHz (US, Canadian model)



Carrier frequency: 98.0 MHz (AEP, E model)
98.1 MHz (US, Canadian model)
Output level: 60 dB (1 mV) 28 dB (25 V)
Mode: mono, unmodulated

Procedure:

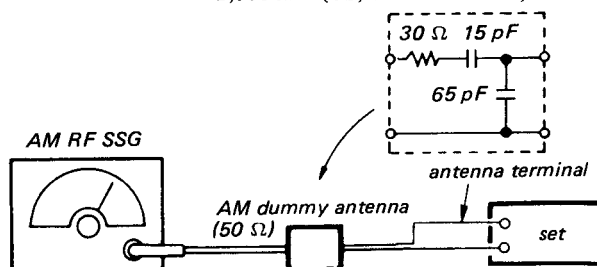
1. Tune in 98.0 MHz (AEP, E model) or 98.1 MHz (US, Canadian model).
2. Adjust RV02 so that the VOM reading changes from low to high (5 V reference voltage).
3. When the FM RF SSG's output level is 28 ± 4 dB, check that the auto scan is stopped.

AM Auto Scan/Stop Level Adjustment

Note: This adjustment should be made after FM auto scan stop level adjustment is completed.

Setting:

Band switch: AM
Frequency: 999 kHz (AEP, E model)
1,000 kHz (US, Canadian model)



999 kHz, 60 dB (1 mV),
33 dB (44.7 μV)
no modulation

Procedure:

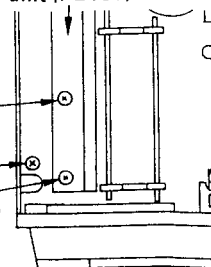
1. Tune in 999 kHz (AEP, E model) or 1,000 kHz (US, Canadian model).
2. Adjust RV03 so that the VOM reading changes from low to high (5.6 V reference voltage).
3. When the AM RF SG's output level is 35 ± 5 dB, check that the auto scan is stopped.

RV03 AM Auto Scan/Stop Level Adjustment

RV101 FM Stereo Separation Adjustment

RV02 FM Auto Scan/Stop Level Adjustment

tuner unit (FE101)



【IC2 (μ PD75108G-640-1B), IC701 (μ PD7508HG-609-22)】

The μ PD75108G-640-1B and μ PD7508HG-609-22 functions are described below.

1. IC2

a. Description

Pin No.	Name	I/O	Description
1	DAT O	O	DATA output terminal to external RAM. Goes low during ACC OFF and ALL OFF. Low is output when there is no initial diode MNOS.
2	RAM ON	O	External RAM's power switching output terminal. Power is turned on for low output and turned OFF for high output. Low is output when there is no initial diode MNOS.
3	CE (PLL)	O	CE output terminal to PLL IC. Used as a LATCH signal to send data to PLL IC. Goes low during ACC OFF and ALL OFF or in modes other than TUNER.
4	CLK O (PLL/LCD)	O	Clock output terminal to PLL IC and LCD driver IC. Goes low during ACC OFF and ALL OFF (display OFF).
5	DAT O (PLL/LCD)	O	Clock output terminal to PLL IC and LCD driver IC. Goes low during ACC OFF and ALL OFF (display OFF).
6	CE (VOL)	O	CE output terminal to VOL IC. Used as a LATCH signal to send data to VOL IC. Goes low during ACC OFF and ALL OFF.
7	RESET	I	Reset input terminal. Microcomputer can be reset and started by changing the level from low to high. A high signal is input during normal operation.
8	$\times 2$	—	System clock oscillation connection terminal. Connected at 4.19 MHz.
9	$\times 1$	I	System clock oscillation connection terminal. Connected at 4.19 MHz.
10	CE (LCD)	O	CE output terminal to LCD driver IC. Used as a LATCH signal to send data to LCD IC. Goes low during ACC OFF and ALL OFF (display OFF).
11	INH (LCD)	O	INH output terminal to LCD driver IC. When high is output, ON is displayed. When low is output, OFF is displayed. Goes low during ACC OFF and ALL OFF (display OFF).
12	CLK O (VOL) /TEST	I/O	Clock output terminal to VOL IC. Goes low during ACC OFF and ALL OFF. During initialization, high is input using a TEST input connector, and initial data is written to the external RAM. Low is input during normal operation. Used as a clock output signal to VOL IC.
13	DAT O (VOL)	O	Data output terminal to VOL IC. Goes low during ACC OFF and ALL OFF.
14	KO7	O	KEY SCAN output terminal.
15	KO6	O	KEY SCAN output terminal.
16	KO5	O	KEY SCAN output terminal.
17	KO4	O	KEY SCAN output terminal.
18	KO3	O	KEY SCAN output terminal.
19	KO2	O	KEY SCAN output terminal.
20	KO1	O	KEY SCAN output terminal.
21	KO0	O	KEY SCAN output terminal.
22	KI3	I	KEY SCAN input terminal.
23	KI2	I	KEY SCAN input terminal.
24	KI1	I	KEY SCAN input terminal.
25	KI0	I	KEY SCAN input terminal.

Pin No.	Name	I/O	Description
26	Vss	I	GND
27	ACC CHECK	I	Accessory input terminal. High : ACC ON, Low : ACC OFF
28	(SK)	—	SK signal input terminal (unused and opened).
29	SD	I	SD signal input terminal. Tuning can be done at high level but not at low level.
30	(DK)	—	DK signal input terminal (unused and opened).
31	STEREO	I	STEREO signal input terminal. A STEREO signal is input for high level, and a MONO signal for low level.
32	CD CHECK	I	CD changer check input terminal. CD changer exists for high level, and does not exist for low level.
33	(METAL)	—	METAL input terminal (unused and opened).
34	TAPE ON	I	TAPE ON input terminal from TAPE control microcomputer. Goes high during tape operation and goes low when tape stops.
35	(ILL)	—	Illumination input terminal (unused and opened).
36	REMOTE IN	I	Remote in (AUX) input terminal. AUX mode is entered when low is input with ACC ON.
37	DAT O (TAPE/CD)	O	DATA output terminal to TAPE control microcomputer and CD changer (key data is output). Low is output except during data transfer.
38	CLK O (TAPE/CD)	O	Clock output terminal to TAPE control microcomputer and CD changer. Low is output except during data transfer.
39	DISPSEL	O	DISPSEL output terminal to TAPE control microcomputer and CD changer. A square wave (15.6 msec period) is output when the TUNER, TAPE, or CD mode is set during power ON. The TAPE control microcomputer detects the timing for sending the display data at the leading edge. The CD changer detects the timing at the trailing edge.
40	BEEP	O	BEEP output terminal. A square wave of approx. 2 kHz is output when a key acknowledge beep or alarm sounds.
41	DAT IN (TAPE/CD)	I	DATA input terminal from TAPE control microcomputer and CD changer.
42	NC	—	
43	CLK IN (TAPE/CD)	I	Clock input terminal from TAPE control microcomputer and CD changer.
44	(REMCON)	—	Remote input terminal (unused and opened).
45	AMP ON	O	Amplifier output terminal. High : AMP ON, Low : AMP OFF
46	METAL	O	METAL output terminal. When a METAL signal is output in TAPE mode, high is output. When no METAL signal is output, low is output. High is output during ACC OFF and ACC OFF or in modes other than TAPE.
47	MONO	O	MONO output terminal. When an FM MONO signal is output in TUNER mode, high is output. When signals other than FM MONO are output, low is output.
48	MUTE	O	AUDIO MUTE output terminal. Used as a mute circuit control signal. A MUTE ON signal is sent when this is high, and a MUTE OFF signal when this is low. Goes low after eight seconds during ACC OFF and ALL OFF. The AMP ON output also goes low.

Pin No.	Name	I/O	Description
49	DOLBY B/C	O	DOLBY B/C switching output terminal. Valid when the DOLBY ON/OFF signal is low. Set to DOLBY B when the signal is high, and set to DOLBY C when it is Low. High is output during AMS, ACC OFF, and ALL OFF in TAPE mode and in modes other than TAPE.
50	DOLBY ON/OFF	O	DOLBY switching output terminal. DOLBY is on for low and off for high. High is output during AMS, ACC OFF and ALL OFF in TAPE mode and in modes other than TAPE.
51	CD	O	CD mode select output terminal. Goes high in CD mode and goes low in modes other than CD. Goes low during ACC OFF.
52	POWER	O	POWER ON output terminal. Goes high in TUNER, TAPE, and CD modes and goes low during ACC OFF. Also used as a remote output port.
53	DIMER select ON/OFF	O	DIMER ON/OFF select output terminal. The DIMER signal can be selected for high and cannot be selected for low. Goes high during ACC OFF and ALL OFF.
54	(LW)	—	LW select output terminal. Low is output during tuner LW band or TV receiving (for Japanese FM). High is output in modes other than TUNER or during ACC OFF. (unused and opened.)
55	AM	O	AM select output terminal. Low is output for tuner AM (MW) band. Goes high in modes other than TUNER or during ACC OFF.
56	FM	O	FM select output terminal. Low is output for tuner FM band. Goes high in modes other than TUNER or during ACC OFF.
57	NC	—	
58	BACKUP 5V	I	Positive power supply terminal. A backup power of approx. 5V is supplied.
59	CD MUTE	I	MUTE input terminal from CD change.
60	TAPE MUTE	I	MUTE input terminal from TAPE control microcomputer.
61	BUSY (RAM)	I	BUSY input terminal from external RAM.
62	DATA IN (RAM)	I	DATA input terminal from external RAM.
63	CE (RAM)	O	CE output terminal to external RAM. Used as a LATCH signal to send data.
64	CLKO (RAM)	O	CLOCK output terminal to external RAM. When there is no RAM indicated by initial diode MNOS, a CE signal is also output for low.

b. Key Matrix

• Matrix Diagram

O \ I	KI0	KI1	KI2	KI3	
K02	TUNER/BAND	ALL OFF	CD PLAY/PAUSE	TAPE PLAY/DIR	Momentary Key
K03	EJECT	DOLBY/MONO	MANU - DISC - REW	MANU + DISC + FF	
K04	③ B.SKIP	MEM. SCAN AUTO. MEM	SEEK + AMS + FF AMS	SEEK - AMS - REW AMS	
K05	MUTE	LOUD	LEVEL -	⑤ SHUFFLE1	
K06	④ DISC. SCAN	② REPEAT	LEVEL +	SELECT	
K07	METAL/LOCAL	① INTRO	⑥ SHUFFLE2	—	Initial diode (for initializing)
K00	DOLBY B/C	MNOS memory	REMIN VOL	PRESET ONLY	
K01	A0	A1	A2	A3	

• Initial Diode (for initializing)

	No diode	Diode
DOLBY B/C	DOLBY B, C	DOLBY B only
MNOS memory	No memory	Memory
REMIN VOL	AUX mode : SELECT, LOUD MUTE, LEVEL+ LEVEL : Valid	AUX mode : SELECT, LOUD MUTE, LEVEL+ LEVEL : Invalid
PRESET ONLY	① - ⑥ Ok in modes other than PRESET	①~⑥ Only in PRESET

	A1 A0 0 0	0 1	1 0	1 1
A3 A2 0 0	J + TV	J		
0 1	USA1	USA1	USA2	USA2
1 0	E1	E1	E2	E2
1 1	AEP L3	AEP L2	AEP L1	AEP

0 ... No diode

1 ... Diode

2. IC701 Description
a. Description

Pin No.	Name	I/O	Description
1	KSI0	I	Key scanning input port.
2	KSI1	I	Key scanning input port.
3	KSI2	I	Key scanning input port.
4	KSI3	I	Key scanning input port.
5	(B. SKIP)	—	High output in BLANK SKIP mode (unused and opened).
6	(REPEAT)	—	High output in REPEAT mode (unused and opened).
7	(INTRO)	—	High output in INTRO scanning mode (unused and opened).
8	AMS	O	High output during AMS operation.
9	TEST	O	Test mode.
10	(REW)	O	High output in REW mode (unused and opened).
11	(NC)	—	
12	(NC)	—	
13	N/R	O	High output in REVERSE mode.
14	MUTE	O	MUTE ON when a high signal is output.
15	RESET	I	Reset by high level and started from program address 0 by low level.
16	CLOCK1	—	System clock oscillator connection terminal.
17	V _{DD}	—	Positive power supply terminal.
18	CLOCK2	—	System clock oscillator connection terminal.
19	GND	—	External interrupt input (active) at leading edge (connected to GND).
20	ACC CHECK	I	ACC ON at high input, ACC OFF at low input.
21	CLK IN	I	Serial clock input from master microcomputer.
22	(SO)	—	(unused and opened).
23	(NC)	—	
24	DATA IN	I	Serial clock input from master microcomputer.
25	CLK OUT	O	Serial transfer clock output to master microcomputer.
26	DATA OUT	O	Serial transfer data output to master microcomputer.
27	(BEEP)	—	BEEP ON at High output (unused and opened).
28	TAPE ON	O	High output during tape operation.
29	DSPSEL	I	Serial transfer timing signal from master microcomputer. (A square wave (32 msec period) is input and can be sent at the leading edge.)
30	REEL2	I	Input to detect the take-up reel table operation in normal REW mode.
31	REEL1	I	Input to detect the take-up reel table operation in normal FWD mode.
32	AMS IN	I	Sound detection input. (High : Sound)
33	CAP M	O	Capstan motor drive output. (Capstan motor is turned on when high is output.)
34	PL	O	Plunger drive output. (Plunger is turned on when high is output and released when low is output.)

Pin No.	Name	I/O	Description									
35	LM-	O	Loading motor drive output. (Loading motor is turned on when high is output and released when low is output.) <table border="1"><tr><td>LM- / LM+</td><td>High</td><td>Low</td></tr><tr><td>High</td><td>Braked</td><td>Forward</td></tr><tr><td>Low</td><td>Reverse</td><td>Stopped</td></tr></table> Note : For forward rotation, the loading motor is activated in the PLAY direction.	LM- / LM+	High	Low	High	Braked	Forward	Low	Reverse	Stopped
LM- / LM+	High	Low										
High	Braked	Forward										
Low	Reverse	Stopped										
36	LM+	O										
37	Vss	—	Connected to GND.									
38	(EVENT)	—	(Unused and connected to GND.)									
39	(φ OUT)	—	(Unused and Opened.)									
40	(KSO0)	—	Key scanning output port (unused and Opened).									
41	(KSO1)	—	Key scanning output port (unused and Opened).									
42	KSO2	O	Key scanning output port.									
43	KSO3	O	Key scanning output port.									
44	(NC)	—										

b. Key Matrix

Input \ Output	KSI0	KSI1	KSI2	KSI3
KSO0	PLAY/DIR	STOP/EJECT	AMS FF/FF	AMS REW/REW
KSO1	B. SKIP	REPEAT	INTRO	—
KSO2	TAPE IN	REMOTE IN	N/R	EJECT/RELEASE
KSO3*	STOP	FF	REW	PLAY

* The input corresponding to KSO3 indicates the mode position shown in the table below.

STOP	FF	REW	PLAY	
I	O	O	O	STOP (EJECT) position
I	I	O	O	Intermediate position between STOP and FF
O	I	O	O	Normal FF position
O	I	I	O	Intermediate position between FF and REW
O	O	I	O	Normal REW position
O	O	I	I	Intermediate position between REW and PLAY
O	O	O	I	PLAY position

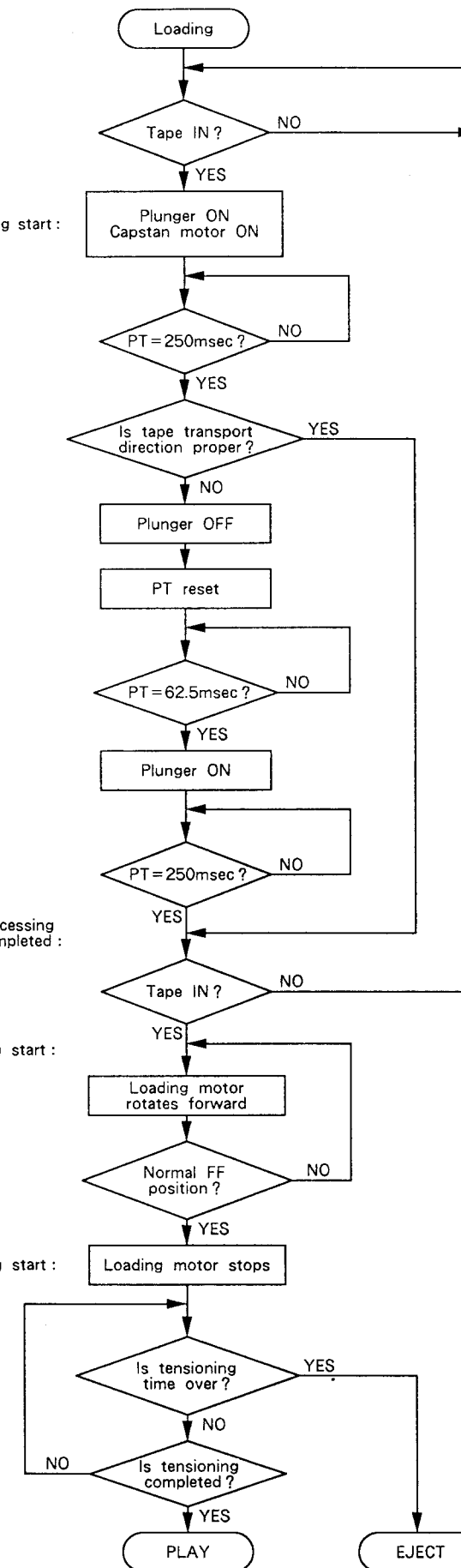
C. Flow Chart
• Loading

Plunger processing start:

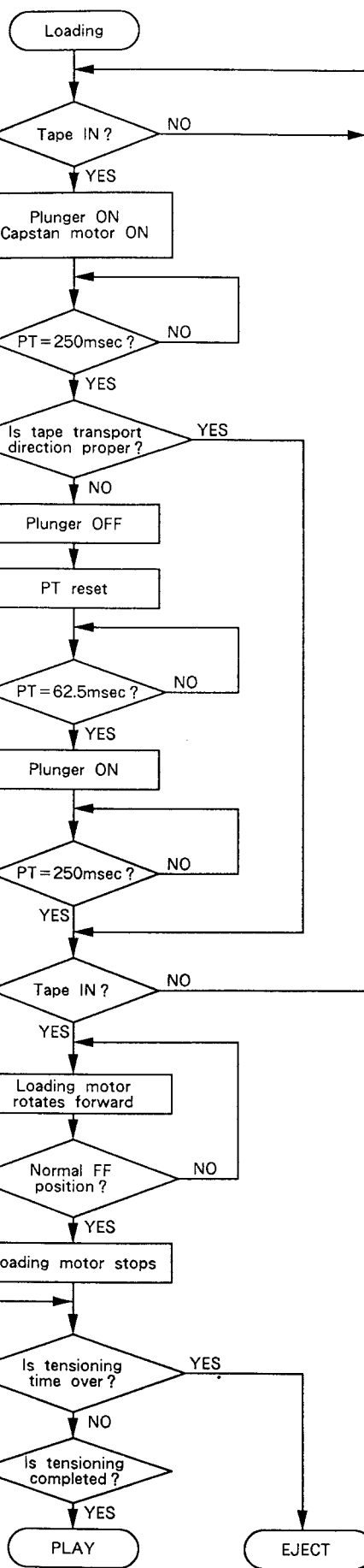
Plunger processing completed:

Loading start:

Tape tensioning start:

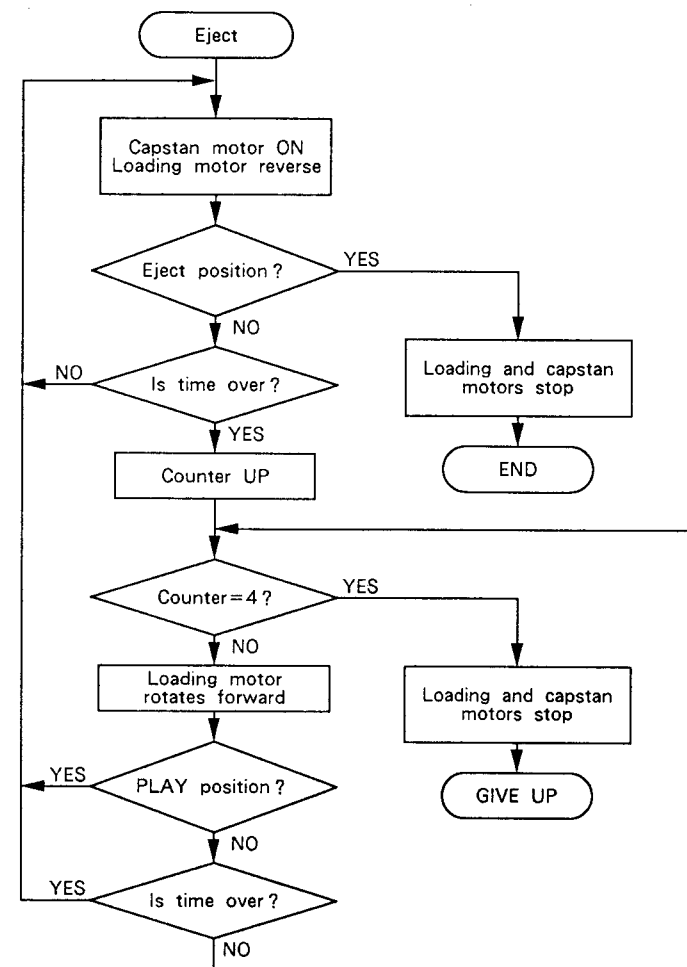


Note: PT stands for plunger timer.



Note : PT stands for plunger timer.

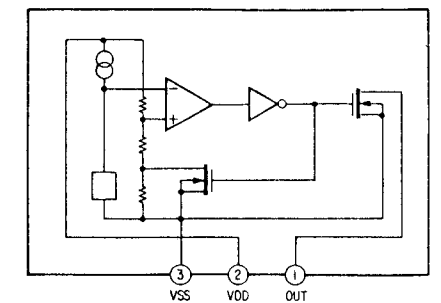
• Eject



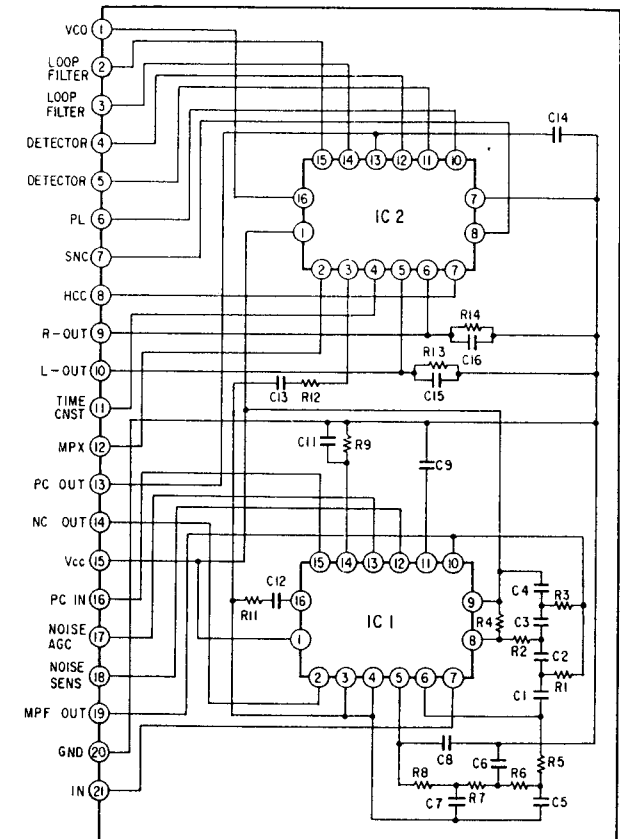
Note : The timer described above indicates the time in the STOP position or each intermediate position. The timer in the STOP position is set for 5 sec, and that in other positions for 2 sec.

• IC BLOCK DIAGRAMS

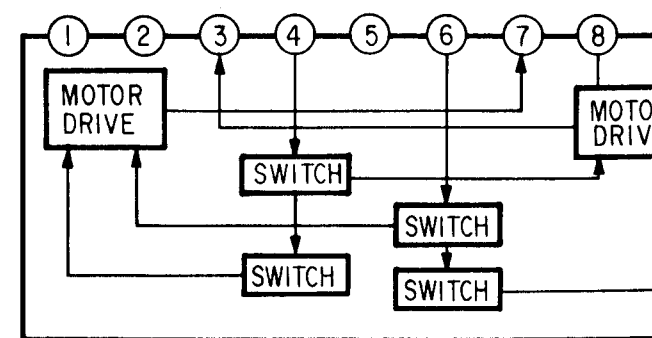
IC4 S-8054HN



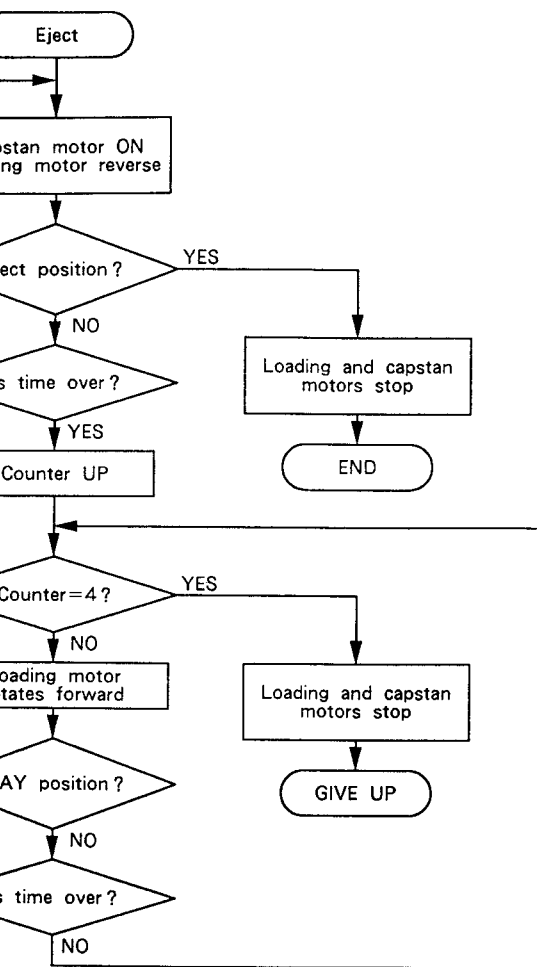
IC101 STK3400



IC704 M54543L



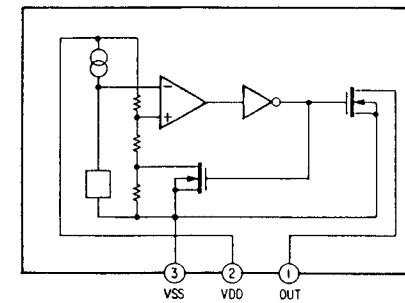
SECTION 4 DIAGRAMS



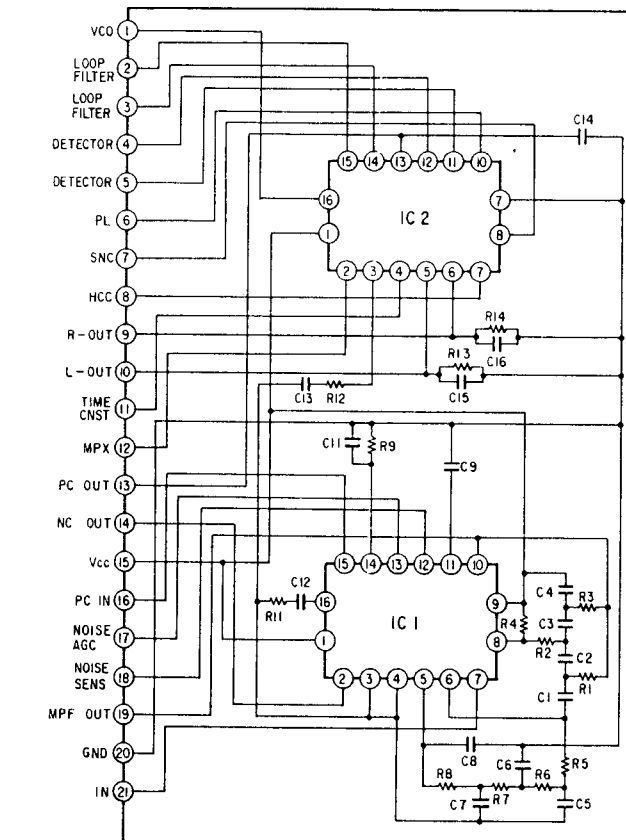
The timer described above indicates the time in the STOP position or each intermediate position. The timer in the STOP position. The timer in the STOP position is set for 5 sec, and that in other positions for 2 sec.

• IC BLOCK DIAGRAMS

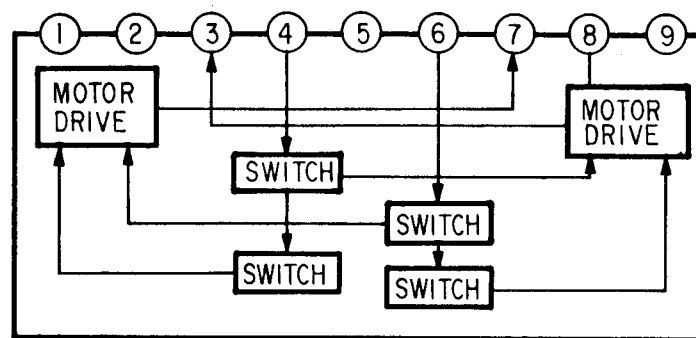
IC4 S-8054HN



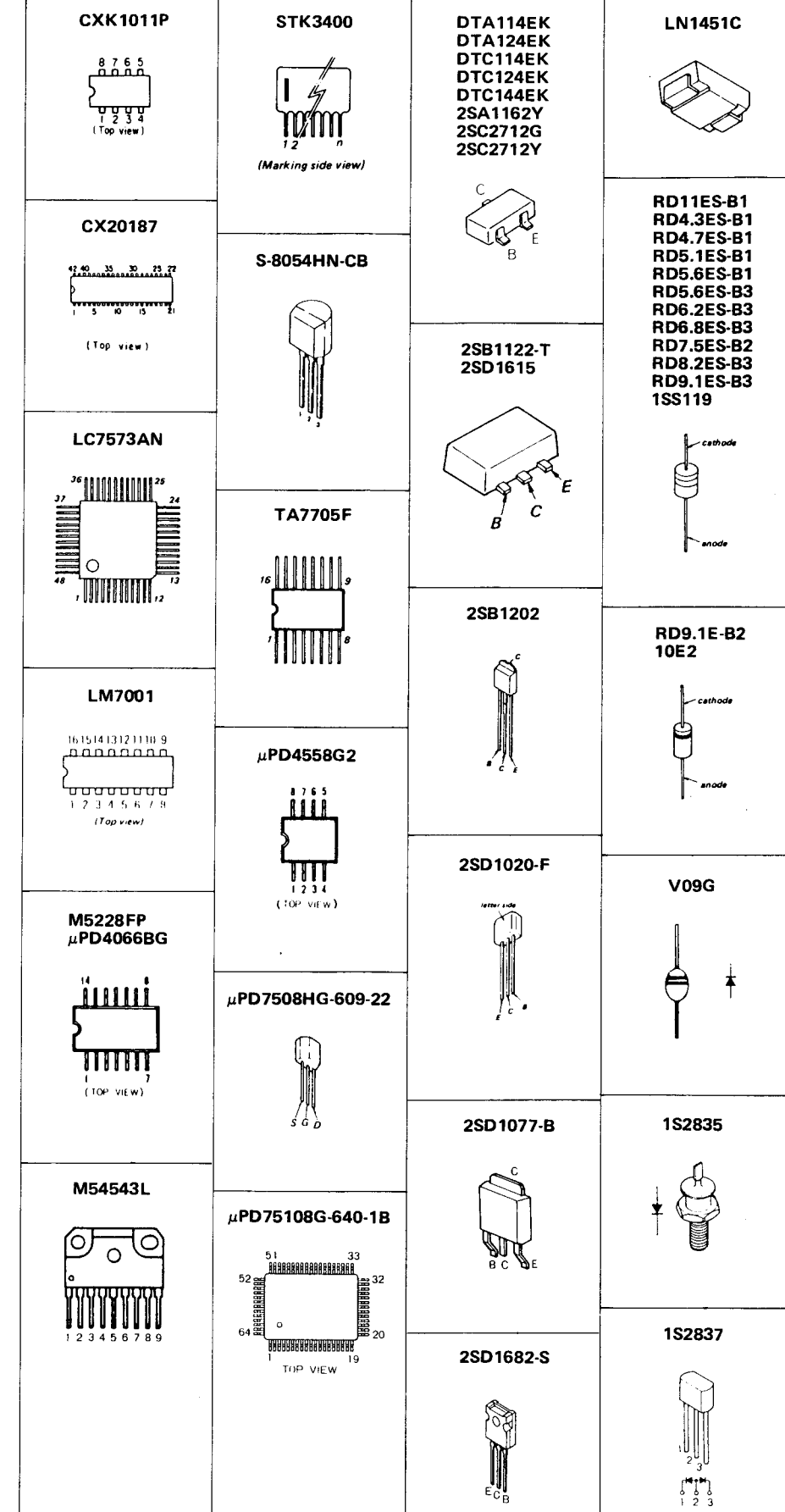
IC101 STK3400



IC704 M54543L



• SEMICONDUCTOR LEAD LAYOUTS

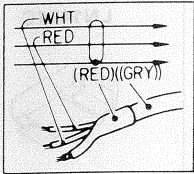


4-1. PRINTED WIRING BOARDS

• See page 25 for Semiconductor Lead Layouts.

Note on Mounting Diagram:

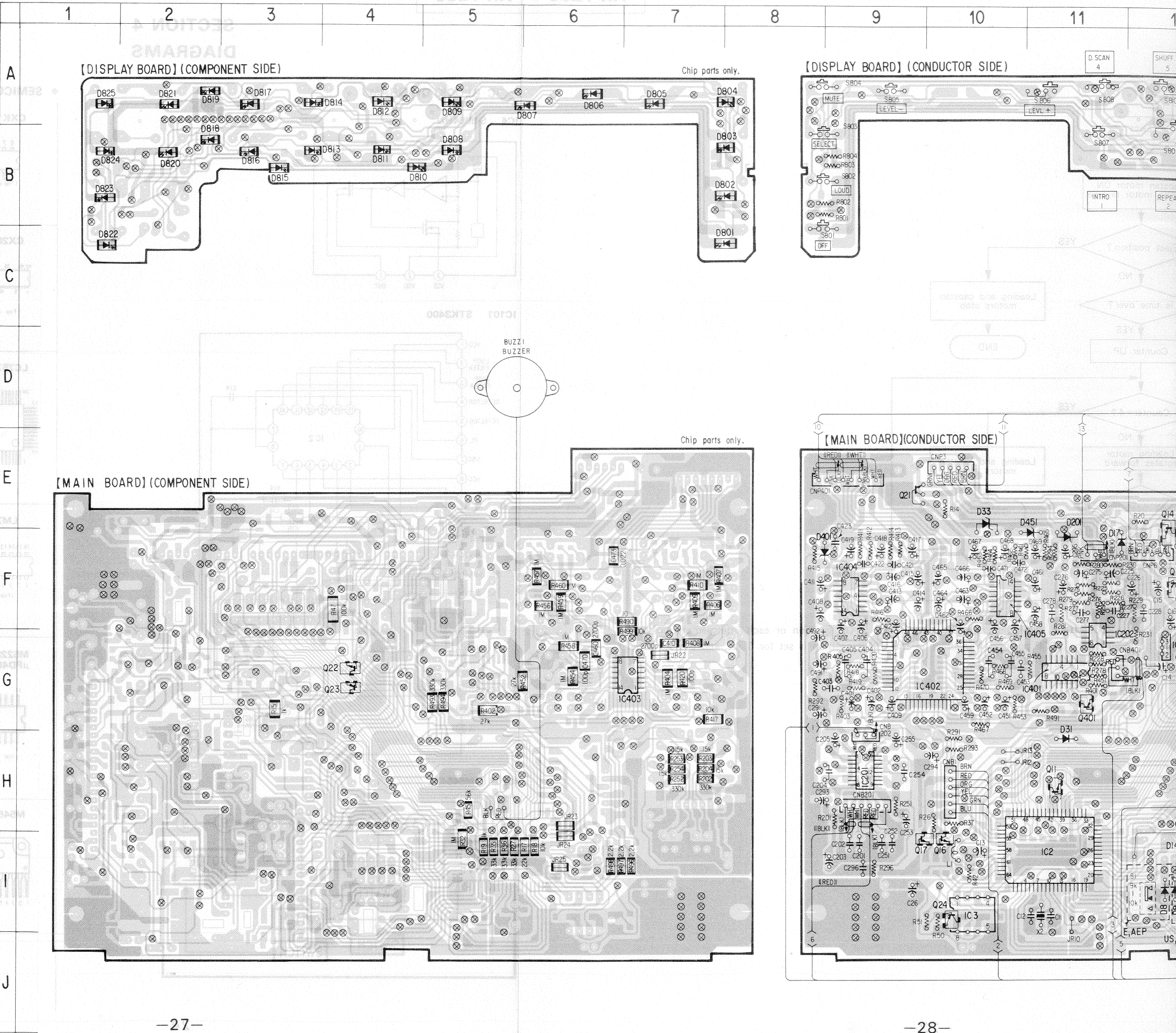
- Color code or sleeving over the end of the jacket.

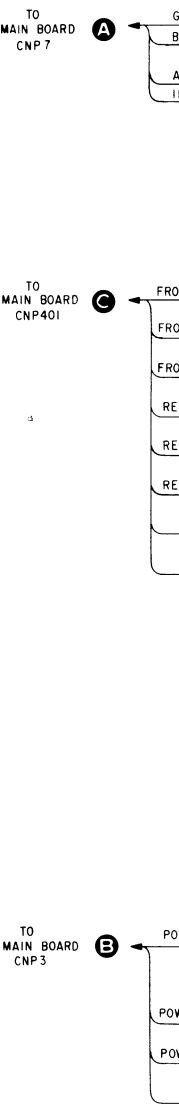


- — : parts extracted from the component side.
- ⊗ : Through hole.
- [Pattern] : Pattern on the side which is seen.
- [Pattern] : Pattern of the rear side.
- [Chip] : Chip components extracted from the rear side.
- CND: Canadian

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D1	I-14	D808	B-5	Q1	H-13
D2	H-13	D809	A-5	Q2	I-13
D4	I-12	D810	B-4	Q4	G-13
D5	I-12	D811	B-4	Q5	G-14
D6	I-12	D812	A-4	Q6	G-14
D7	I-12	D813	B-3	Q7	J-13
D8	I-12	D814	A-3	Q8	I-13
D9	I-12	D815	B-3	Q9	G-13
D10	I-12	D816	B-3	Q10	G-13
D14	I-12	D817	A-3	Q11	H-11
D16	H-12	D818	B-2	Q12	F-12
D17	F-11	D819	A-2	Q14	E-12
D18	E-13	D820	B-2	Q15	E-14
D19	E-15	D821	A-2	Q16	I-10
D20	F-13	D822	C-1	Q17	I-10
D21	F-13	D823	B-1	Q18	E-13
D22	F-13	D824	B-1	Q19	E-13
D23	F-13	D825	A-1	Q20	G-13
D24	F-13	D901	B-24	Q21	E-9
D25	F-13	D902	B-24	Q22	G-4
D26	F-13	D905	A-25	Q23	G-4
D27	F-13	D906	A-23	Q24	I-10
D28	F-13			Q101	I-15
D29	F-13	IC1	H-14	Q102	G-15
D30	E-14	IC2	I-11	Q103	G-15
D31	H-11	IC3	I-10	Q104	G-14
D32	F-12	IC4	G-12	Q105	G-15
D33	E-10	IC101	H-15	Q391	H-19
D34	G-14	IC201	H-9	Q392	I-19
D101	H-15	IC202	F-11	Q401	G-11
D102	I-14	IC301	H-19	Q701	F-22
D201	F-11	IC302	I-17	Q702	F-22
D401	F-9	IC401	G-11	Q703	E-19
D451	E-11	IC402	G-9	Q704	F-19
D701	F-22	IC403	G-7	Q705	F-19
D702	F-22	IC404	F-9	Q706	F-19
D703	F-22	IC405	F-10	Q707	E-18
D704	F-22	IC701	F-21	Q708	F-17
D705	F-20	IC702	F-22	Q709	E-17
D706	F-20	IC703	F-18	Q850	B-21
D707	F-18	IC704	F-19	Q860	B-21
D708	F-17	IC901	B-22	Q901	B-24
D709	F-17			Q902	B-24
D710	F-17			Q903	B-24
D711	F-20			Q910	A-24
D801	C-8			Q913	B-25
D802	B-8			Q914	B-24
D803	B-8			Q915	B-24
D804	A-8			Q916	A-23
D805	A-7			Q950	B-21
D806	A-6			Q951	B-23
D807	A-6			Q960	B-21





- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM or PB
(): AM
- Voltages are taken with a VOM (50 k Ω /V).
Voltage variations may be noted due to normal production tolerances.
- Signal path.
⇒ : FM Σ : PB
- CND: Canadian

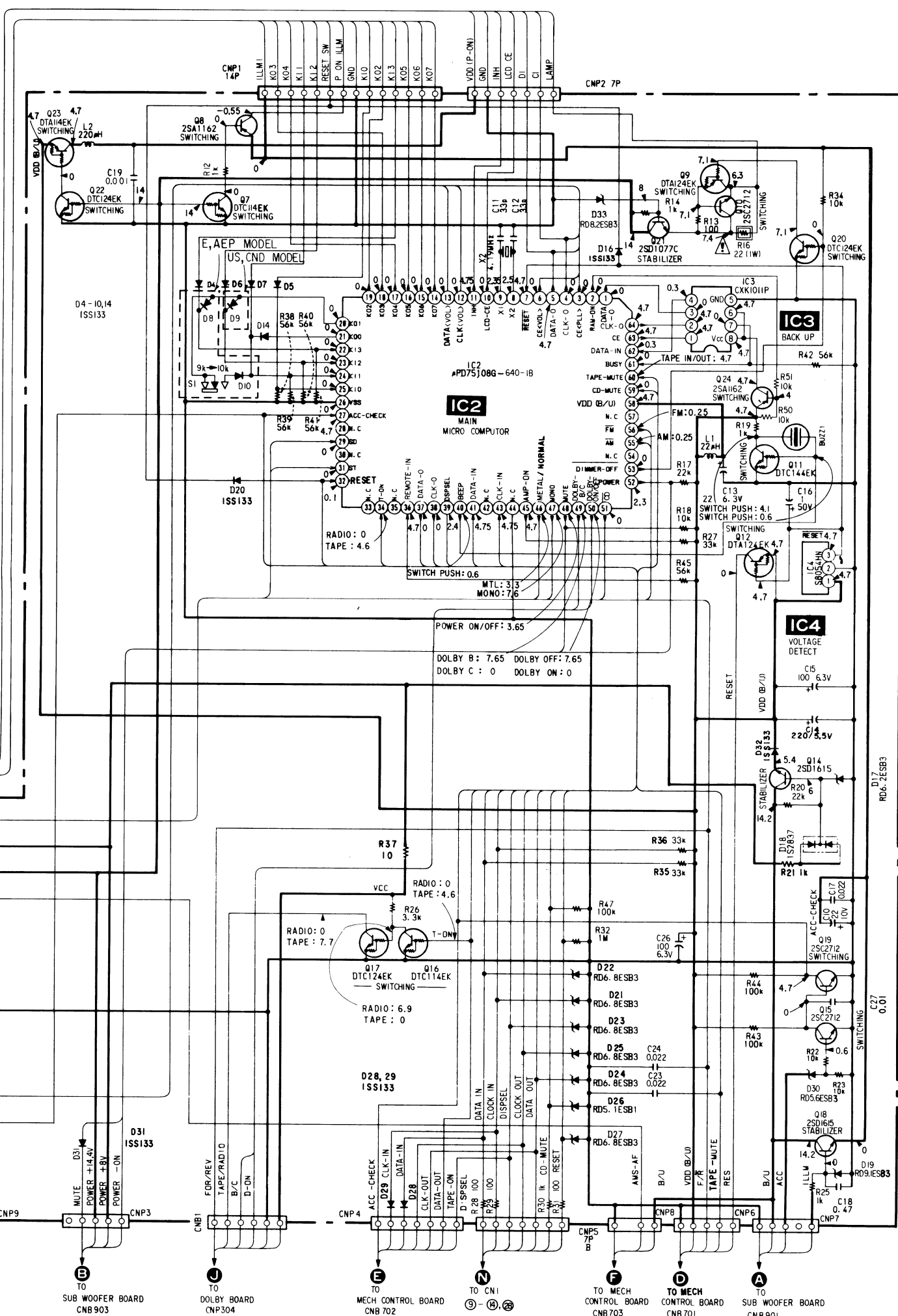
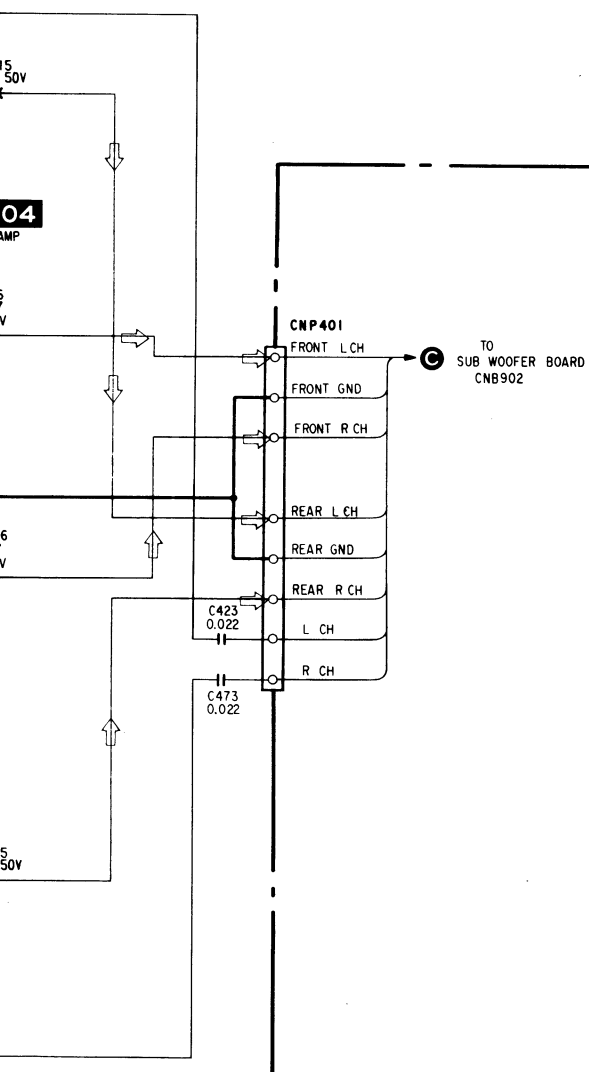
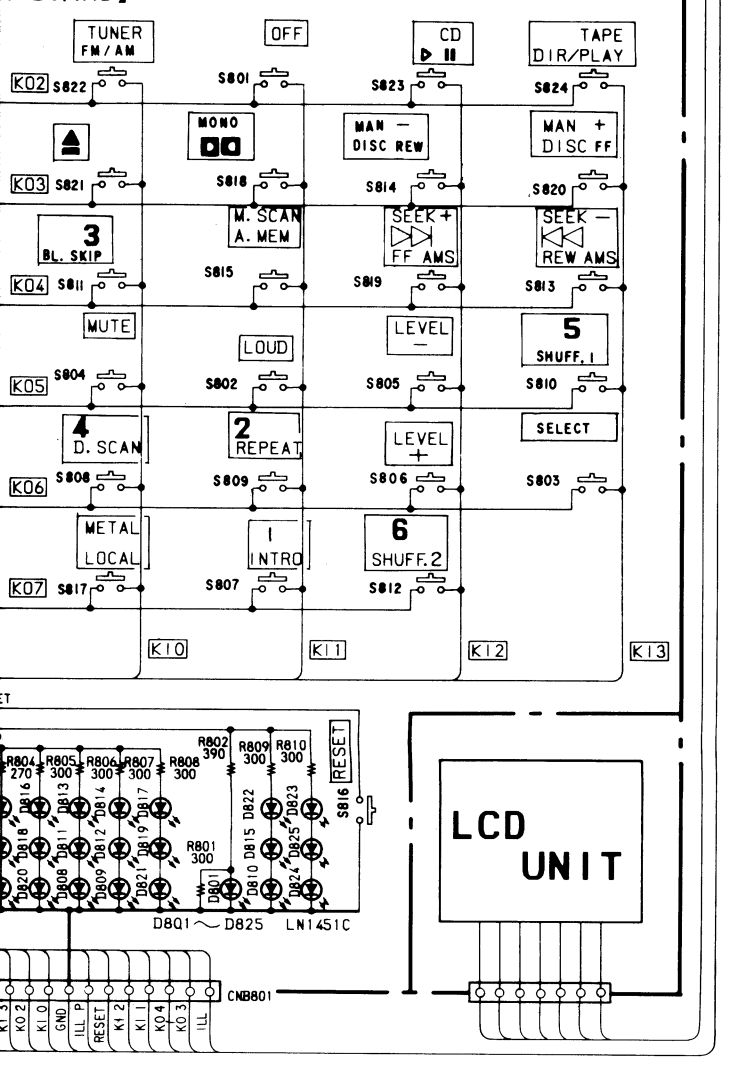
Ref. No.	Switch	Position
S10-1	P1	OFF
S10-2	P2	OFF
S10-3	P3	OFF
S10-4	P4	OFF
S11	F/R	OFF
S12	TAPE-IN	OFF
SW901	LEVEL 6dB/12dB/18dB	6dB
SW902	LEVEL 80Hz/120Hz	120Hz

TOTAL CURRENT
FM: 550mA
AM: 480mA
PB: 580mA
FF/REW: 600mA





Y BOARD]



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- $\square$: nonflammable resistor.
- --- : B+ Line
- --- : adjustment for repair.
- Total current is measured with no cassette installed.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM or PB
- () : AM
- Voltages are taken with a VOM (50 $\text{k}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- --- : FM --- : PB
- CND: Canadian

Note:
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Main, Display Block Switches

Ref. No.	Switch	Position
S1	9K/10K	9K
S2	POWER	OFF
S801	OFF	OFF
S802	LOUD	OFF
S803	SELECT	OFF
S804	MUTE	OFF
S805	LEVEL -	OFF
S806	LEVEL +	OFF
S807	1/INTRO	OFF
S808	4/D. SCAN	OFF
S809	2/REPEAT	OFF
S810	5/SHUFF. 1	OFF
S811	3/BL. SKIP	OFF
S812	6/SHUFF. 2	OFF
S813	SEEK -/REW AMS	OFF
S814	MAN -/DISK REW	OFF
S815	M. SCAN/A. MEM	OFF
S816	RESET	OFF
S817	METAL/LOCAL	OFF
S818	MONO/DOLBY	OFF
S819	SEEK +/FF AMS	OFF
S820	MAN +/DISC FF	OFF
S821	EJECT	OFF
S822	TUNER, FM/AM	OFF
S823	CD PLAY, PAUSE	OFF
S824	TAPE, DIR/PLAY	OFF

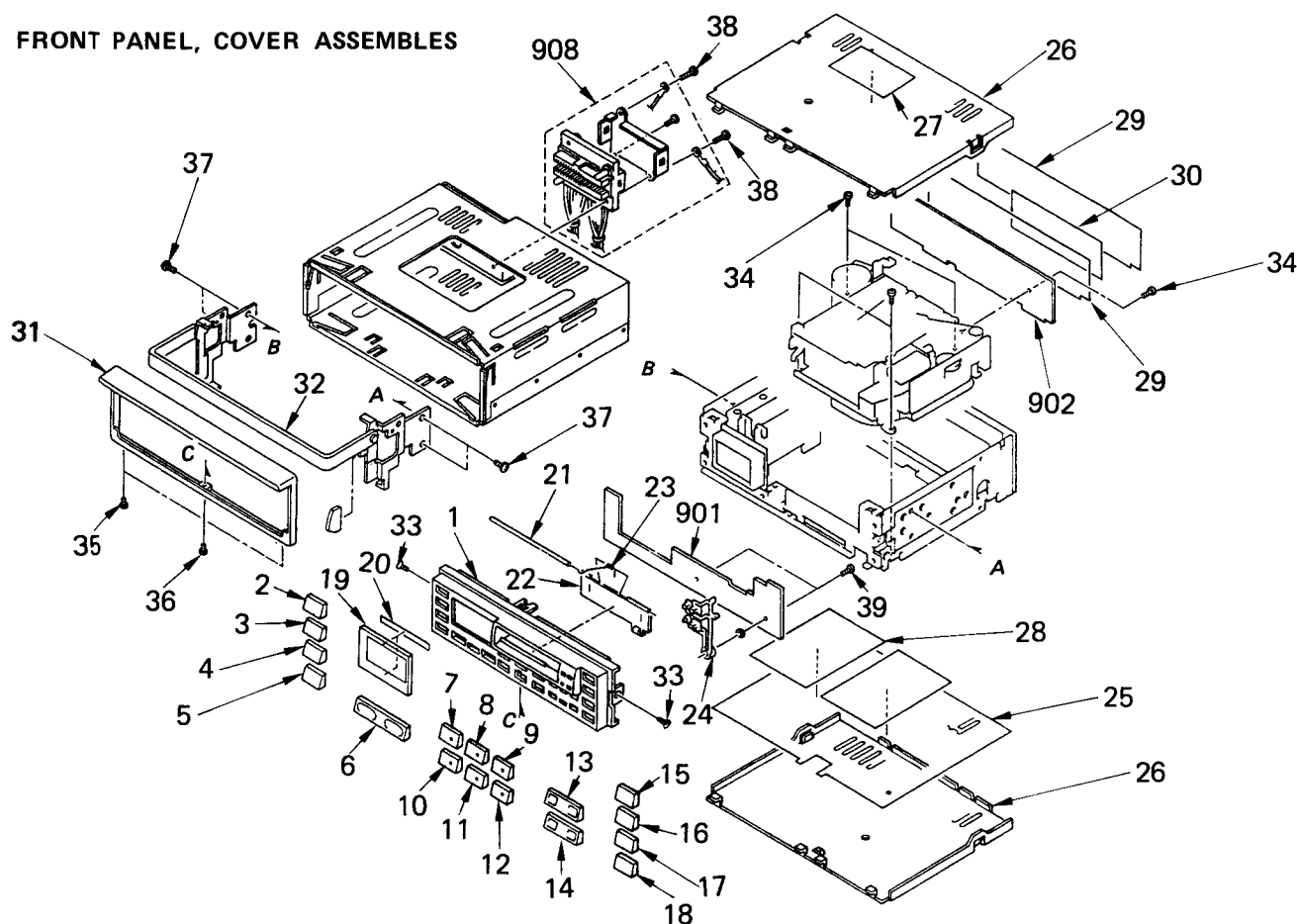
SECTION 5

EXPLODED VIEWS

NOTE:

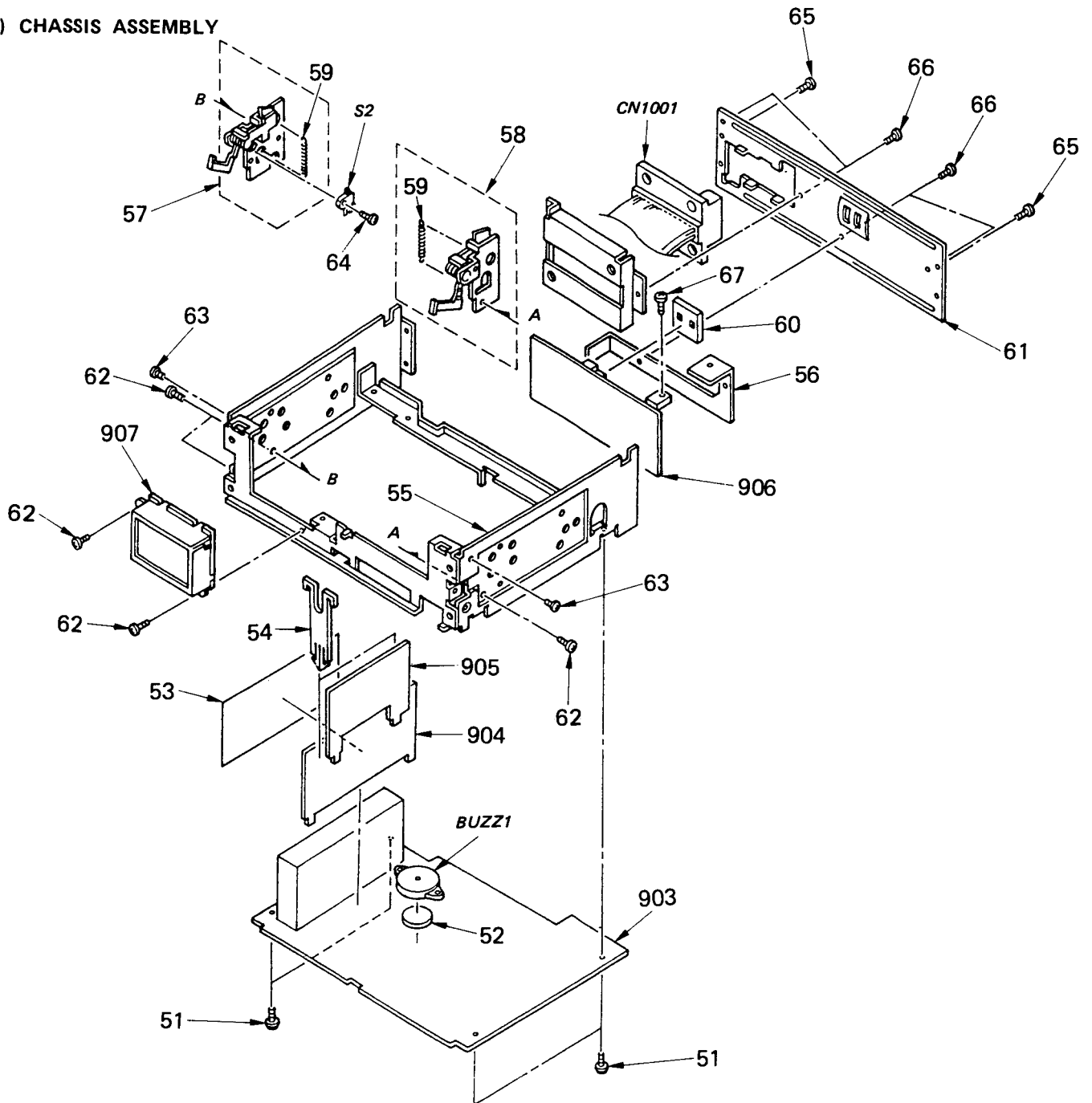
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

(1) FRONT PANEL, COVER ASSEMBLES



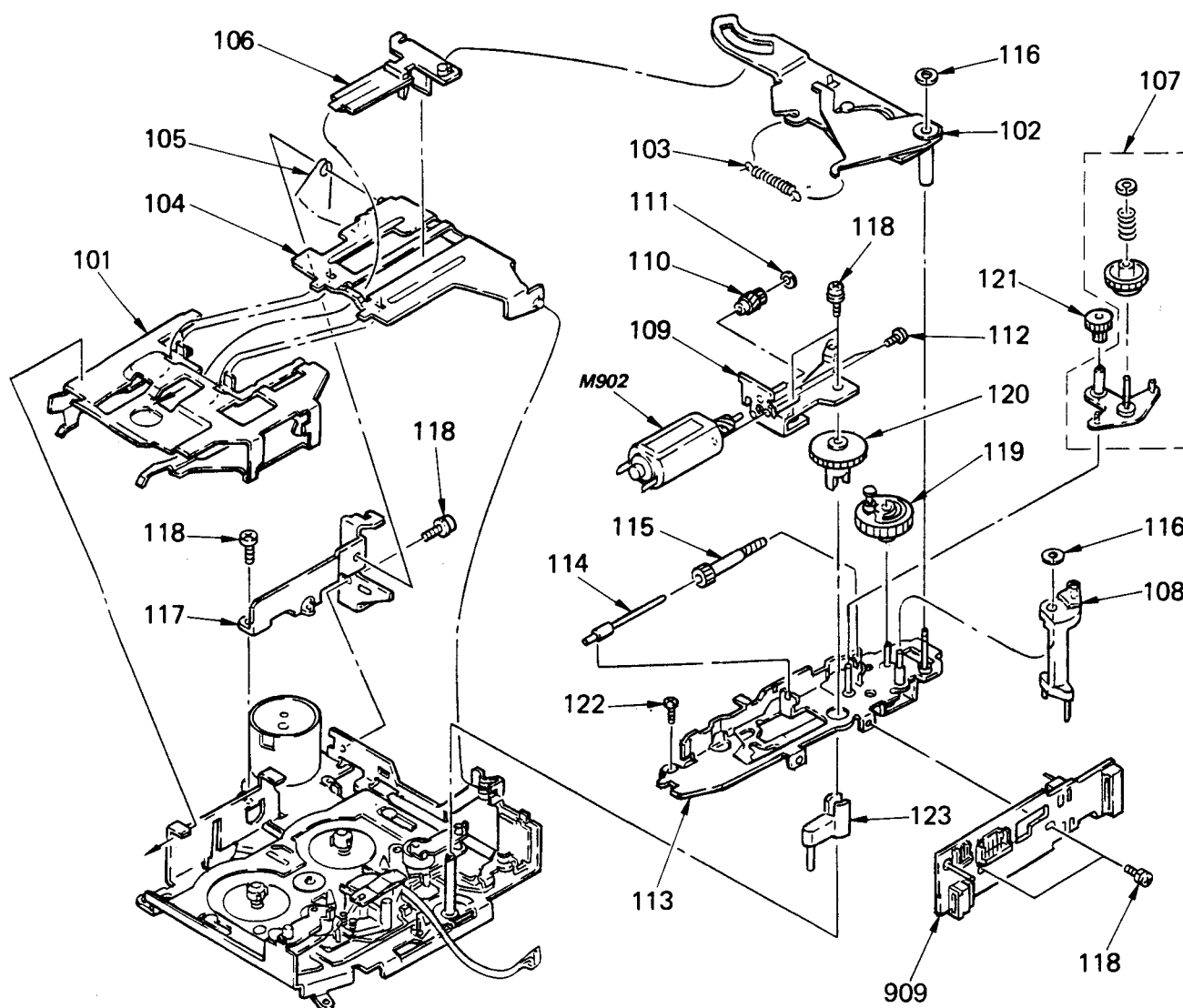
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	3-344-521-01	PANEL, FRONT		23	3-332-131-01	SPRING	
2	3-344-516-01	BUTTON (LU:N1)(OFF)		24	3-344-519-01	BUTTON (D)	
3	3-344-511-01	BUTTON (M:N1)(LOUD)		25	*3-344-560-01	INSULATOR (3)	
4	3-344-511-11	BUTTON (M:N1)(SELECT)		26	*3-332-151-11	COVER	
5	3-344-518-01	BUTTON (LD:N1)(MUTE)		27	*3-344-546-01	(US).....LABEL, MODEL NUMBER (U)	
6	3-344-514-01	BUTTON (M:S3)(LEVEL)			*3-344-547-01	(Canadian)....LABEL, MODEL NUMBER (CA)	
7	3-344-512-01	BUTTON (M:N1P)(1)			*3-344-548-01	(E,AEP).....LABEL, MODEL NUMBER (E,AEP)	
8	3-344-512-11	BUTTON (M:N1P)(2)					
9	3-344-512-21	BUTTON (M:N1P)(3)		28	3-344-545-01	LABEL, CONNECTOR	
10	3-344-512-31	BUTTON (M:N1P)(4)		29	*3-344-503-01	INSULATOR (2)	
11	3-344-512-41	BUTTON (M:N1P)(5)		30	*3-344-558-01	PLATE, SHIELD	
12	3-344-512-51	BUTTON (M:N1P)(6)		31	3-344-564-01	FRAME, ORNAMENTAL	
				32	X-3344-508-1	HANDLE ASSY	
13	3-344-513-01	BUTTON (M:S2)(SEEK,AMS)		33	7-682-246-09	SCREW +K 3X5	
14	3-344-513-11	BUTTON (M:S2)(MAN,DISK)		34	7-621-773-86	SCREW +PTT 2.6X4 (S)	
15	3-344-515-01	BUTTON (RU:N1)(EJECT)		35	7-627-553-38	SCREW, PRECISION +P 2X3	
16	3-344-511-21	BUTTON (M:N1)(TUNER)		36	7-627-553-68	SCREW, PRECISION +P 2X6	
17	3-344-511-31	BUTTON (M:N1)(CD)		37	3-344-561-01	SCREW (M4X5)	
18	3-344-517-01	BUTTON (RD:N1)(TAPE)		38	7-682-952-01	SCREW +PSW 3X16	
19	3-344-505-01	PLATE, INDICATION		39	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
20	*3-325-757-01	SHEET, ADHESIVE		901	*1-624-415-11	PC BOARD, DISPLAY	
21	3-332-130-01	SHAFT, C DOOR		902	*A-3216-432-A	PC BOARD ASSY, MECH CONTROL	
22	A-3249-017-A	DOOR ASSY, CASSETTE		908	1-559-877-11	CORD (WITH CONNECTOR)	

(2) CHASSIS ASSEMBLY



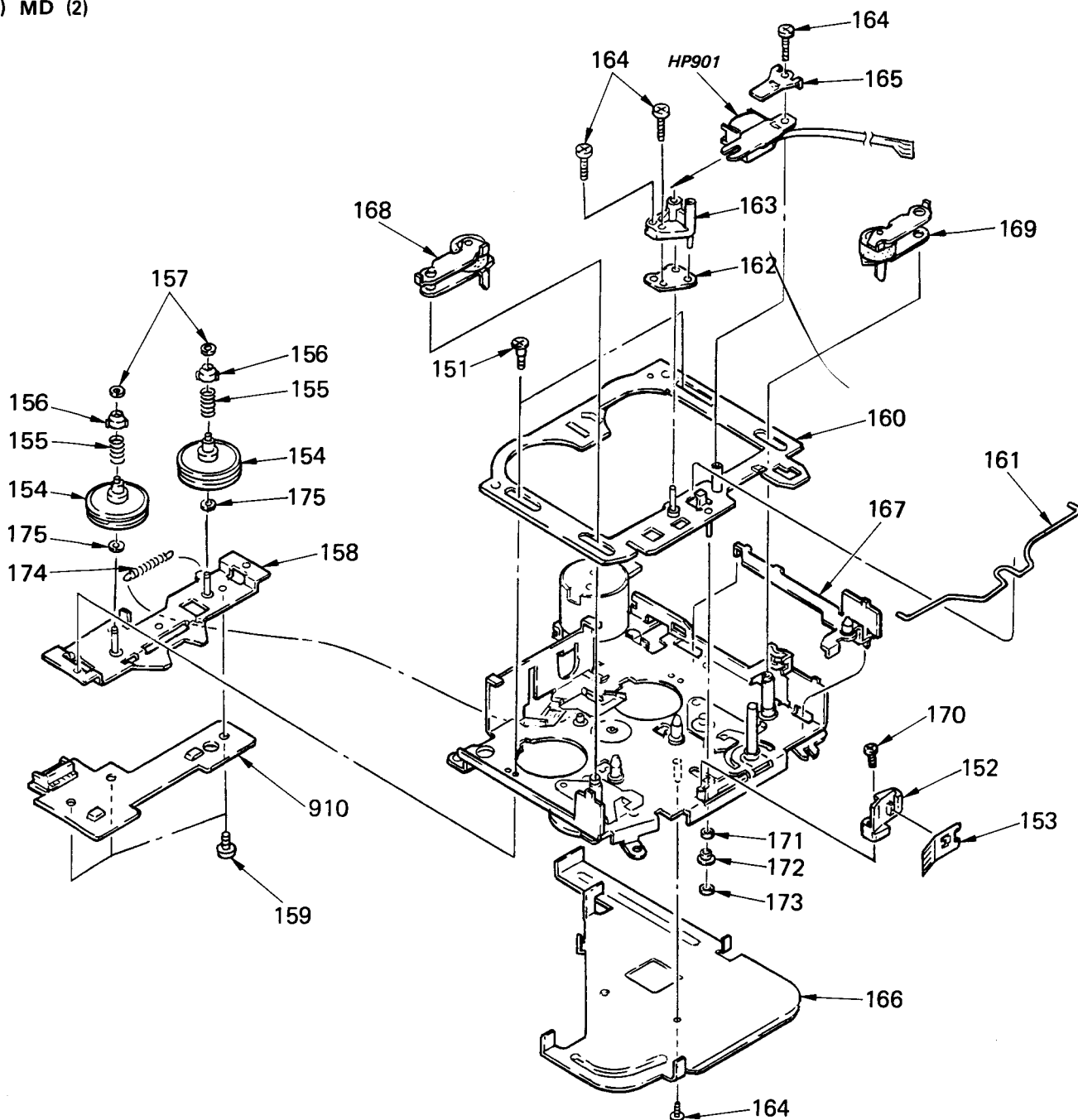
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	3-344-501-01	SCREW (+ PTT 3X6), GROUND POINT		64	7-621-283-00	SCREW +P 2X5	
52	9-911-839-XX	CUSHION, FIXED		65	7-685-752-01	SCREW +PTT 3X8 (S)	
53	*3-344-502-01	INSULATOR (1)		66	7-682-145-01	SCREW +P 3X4	
54	*3-344-504-01	BRACKET (PC BOARD)		67	7-682-147-01	SCREW +PTT 3X6 (S)	
55	*X-3344-501-1	CHASSIS ASSY		903	*A-3216-470-A	(US,Canadian,E)...PC BOARD ASSY, MAIN	
56	3-344-550-03	BRACKET (PCB)			*A-3216-593-A	(AEP).....PC BOARD ASSY, MAIN	
57	X-3344-502-1	LOCK ASSY (LEFT)	59	904	*A-3216-437-A	MOUNTED PCB, DOLBY	
58	X-3344-503-1	LOCK ASSY (RIGHT)	59	905	*1-624-417-11	PC BOARD, ARI	
59	3-645-189-00	SPRING, TENSION		906	*A-3270-479-A	MOUNTED PCB, WOOFER	
60	3-344-563-02	SHEET		907	1-808-291-11	DISPLAY PANEL, LIQUID CRYSTAL	
61	3-344-552-03	PANEL (B)		BUZZ1	1-529-055-11	BUZZER, PIEZOELECTRIC	
62	7-621-773-86	SCREW +PTT 2.6X4 (S)		CN1001	1-559-878-11	CORD (WITH CONNECTOR)	
63	7-627-553-38	SCREW, PRECISION +P 2X3		S2	1-570-771-11	SWITCH (POWER)	

(3) MD (1)



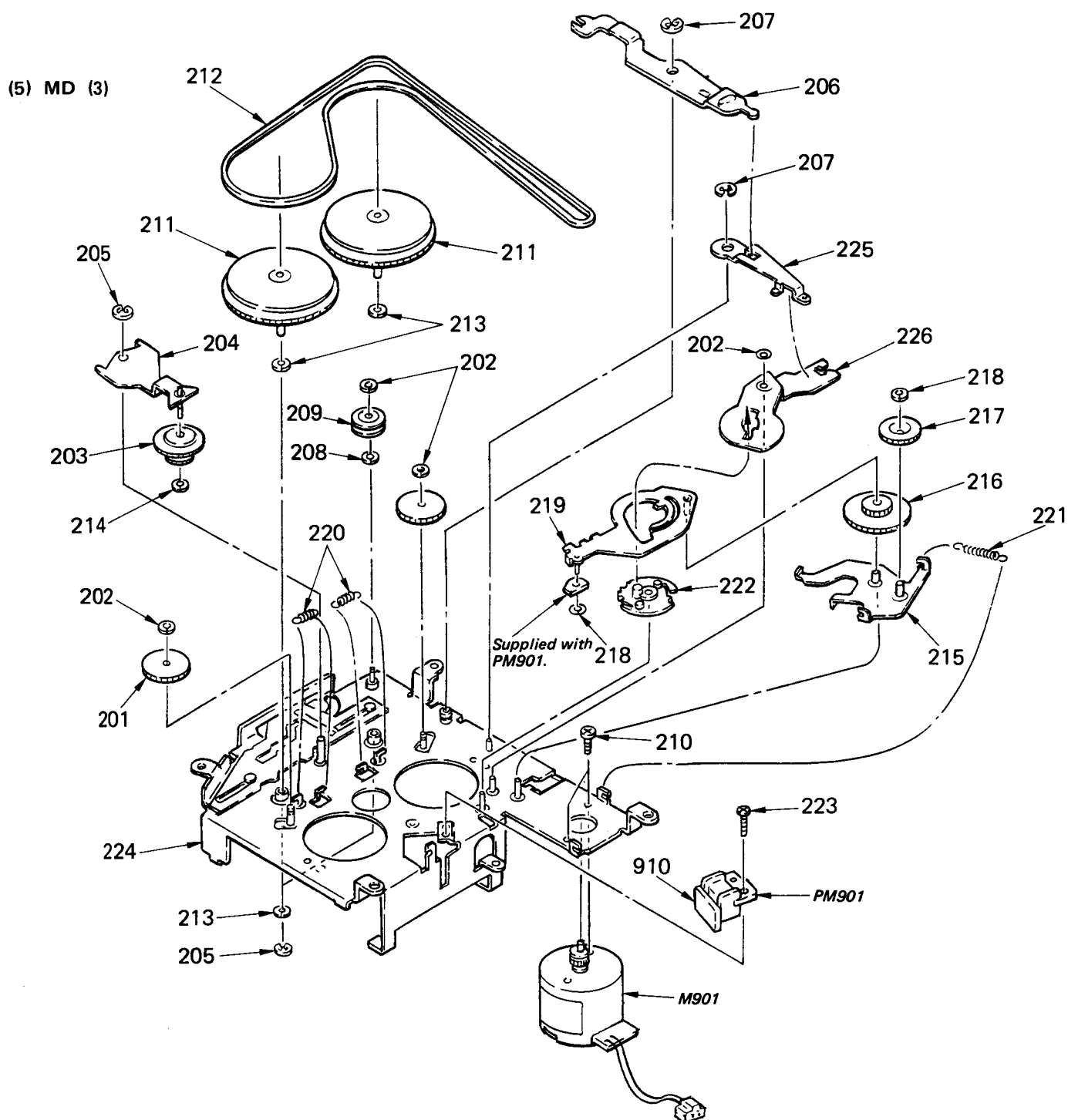
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	*3-344-103-01	HOUSING, CASSETTE		114	*3-344-157-01	SHAFT, DRIVING GEAR (B)	
102	*X-3344-121-1	ARM ASSY, SUCTION		115	3-344-156-01	GEAR (B), DRIVING	
103	3-344-216-01	SPRING (SUCTION ARM), TENSION		116	3-344-222-01	WASHER	
104	*X-3344-120-1	HANGER ASSY, HOUSING		117	*3-344-112-01	BRACKET, HANGER	
105	3-344-113-01	SPRING		118	7-628-253-00	SCREW +PS 2X4	
106	*3-344-118-01	CATCHER		119	X-3344-119-1	GEAR ASSY, LOADING CAM	
107	A-3239-954-A	GEAR ASSY, DRIVING ARM		120	3-344-114-01	GEAR, MODE	
108	*X-3344-122-1	ARM ASSY, REVERSE		121	3-344-108-01	GEAR (A), FRICTION	
109	*X-3344-110-1	BRACKET ASSY, MOTOR		122	7-621-255-25	SCREW +P 2X4	
110	3-344-170-01	GEAR (A), DRIVING		123	X-3344-117-1	ARM ASSY, MODE	
111	3-344-223-01	WASHER		909	*1-624-413-11	PC BOARD, SWITCH	
112	7-627-553-27	SCREW, PRECISION +P 2X2.5		M902	A-3239-956-A	MOTOR SUB ASSY, L	
113	*X-3344-108-1	CHASSIS ASSY, MCU					

(4) MD (2)



No.	Part No.	Description
151	3-344-110-01	SCREW (HB), STEP
152	*3-344-154-01	HOLDER, CONTACT
153	3-344-155-01	CONTACT (SWITCH)
154	X-3344-104-1	TABLE ASSY, REEL
155	3-344-143-01	SPRING (BT), COMPRESSION
156	3-344-136-01	CAP, REEL
157	3-344-224-01	WASHER
158	*X-3344-105-1	BRACKET ASSY, REEL TABLE
159	7-627-553-27	SCREW, PRECISION +P 2X2.5
160	*X-3344-103-3	BASE ASSY, HEAD
161	3-344-129-01	SPRING
162	3-344-128-01	SEAM, DAH
163	3-344-127-01	ARM, DAH
164	7-627-850-67	SCREW, PRECISION +P 1.4X4

No.	Part No.	Description	Remarks
165	3-344-130-01	RETAINER, HEAD	
166	*3-344-220-01	COVER, MD	
167	*X-3344-118-1	LEVER ASSY, RVS CONVERSION	
168	X-3344-116-1	ARM (F) ASSY, PINCH	
169	X-3344-115-1	ARM (R) ASSY, PINCH	
170	7-627-850-18	SCREW, PRECISION +P 1.4X2.5	
171	3-344-117-01	ROLLER (B), H/B	
172	3-344-116-01	ROLLER (A), H/B	
173	3-344-222-01	WASHER	
174	3-344-217-01	SPRING (CAM LOCK LEVER), TENTION	
175	3-701-437-11	POLY-SLIDER (A)	
910	*1-624-412-11	PC BOARD, REEL	
HP901	1-543-506-11	HEAD, MAGNETIC (PLAYBACK)	



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	3-344-104-01	GEAR, PLAY		216	3-344-146-01	GEAR (B), RVS	
202	3-344-222-01	WASHER		217	3-344-147-01	GEAR (A), RVS	
203	X-3344-102-1	GEAR ASSY, FR		218	3-344-223-01	WASHER	
204	*X-3344-101-1	ARM ASSY, FR		219	X-3344-107-1	LEVER ASSY, CAM LOCK	
205	3-590-768-00	RING (A), E		220	3-344-218-01	SPRING (PLAY ARM), TENSION	
206	*3-344-107-01	ARM, POWER		221	3-344-215-01	SPRING, TENSION	
207	7-624-104-04	STOP RING 2.0, TYPE -E		222	3-344-119-01	GEAR, RVS CAM	
208	3-701-436-01	WASHER, 1.6		223	7-627-850-67	SCREW, PRECISION +P 1.4X4	
209	3-344-105-01	PULLEY (ASSY), MIDWAY		224	*X-3344-113-5	CHASSIS ASSY, MECHANICAL	
210	7-627-553-27	SCREW, PRECISION +P 2X2.5		225	*3-344-106-01	LEVER, LDG	
211	3-344-109-01	FLYWHEEL (ASSY)		226	*X-3344-114-1	LEVER ASSY, RVS	
212	3-344-115-01	BELT		910	*1-624-412-11	PC BOARD, PLANGER	
213	3-701-437-11	POLY-SLIDER (A)		M901	A-3239-951-A	MOTOR SUB ASSY, CAPSTAN	
214	3-344-224-01	WASHER, FR SLIP		PM901	1-454-461-11	SOLENOID, PLUNGER	
215	*X-3344-106-1	LEVER ASSY, RVS GEAR (B)					

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: μ MF.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA....: μ A..., UPA....: μ PA...,
UPC....: μ PC, UPD....: μ PD....

- CND: Canadian

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
901	*1-624-415-11	PC BOARD, DISPLAY	C108	1-163-197-00	CERAMIC MELF 470PF 10% 50V
902	*A-3216-432-A	PC BOARD ASSY, MECH CONTROL	C109	1-130-483-00	MYLAR 0.01MF 5% 50V
903	*A-3216-470-A	(US,Canadian,E)...PC BOARD ASSY, MAIN	C110	1-163-053-00	(AEP,E)...CERAMIC MELF 0.0033MF 20% 16V
	*A-3216-593-A	(AEP).....PC BOARD ASSY, MAIN	C110	1-163-055-00	(US,Canadian) ...CERAMIC MELF 0.0047MF 20% 16V
904	*A-3216-437-A	MOUNTED PCB, DOLBY	C111	1-163-053-00	(AEP,E)...CERAMIC MELF 0.0033MF 20% 16V
905	*1-624-417-11	PC BOARD, ARI	C111	1-163-055-00	(US,Canadian) ...CERAMIC MELF 0.0047MF 20% 16V
906	*A-3270-479-A	MOUNTED PCB, WOOFER	C112	1-123-611-00	ELECT 1MF 20% 50V
907	1-808-291-11	DISPLAY PANEL, LIQUID CRYSTAL	C113	1-123-611-00	ELECT 1MF 20% 50V
908	1-559-877-11	CORD (WITH CONNECTOR)	C114	1-124-257-00	ELECT 2.2MF 20% 50V
909	*1-624-413-11	PC BOARD, SWITCH	C115	1-163-187-00	CERAMIC MELF 180PF 10% 50V
910	*1-624-412-11	PC BOARD, PLANGER	C151	1-124-463-00	ELECT 0.1MF 20% 50V
	*1-624-412-11	PC BOARD, REEL	C152	1-163-063-00	CERAMIC MELF 0.022MF 25V
BUZZ1	1-529-055-11	BUZZER, PIEZOELECTRIC	C153	1-163-063-00	CERAMIC MELF 0.022MF 25V
C1	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C154	1-163-063-00	CERAMIC MELF 0.022MF 25V
C2	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C155	1-124-446-11	ELECT 47MF 20% 10V
C3	1-130-483-00	MYLAR 0.01MF 5% 50V	C156	1-124-236-00	ELECT 47MF 20% 10V
C4	1-124-258-00	ELECT 3.3MF 20% 50V	C201	1-130-468-00	FILM 560PF 5% 50V
C5	1-124-258-00	ELECT 3.3MF 20% 50V	C202	1-130-468-00	FILM 560PF 5% 50V
C6	1-124-584-00	ELECT 100MF 20% 10V	C203	1-124-224-00	ELECT 47MF 20% 6.3V
C7	1-124-224-00	ELECT 47MF 20% 6.3V	C204	1-130-483-00	FILM 0.01MF 5% 50V
C8	1-163-161-00	CERAMIC MELF 15PF 5% 50V	C205	1-124-259-00	ELECT 4.7MF 20% 50V
C9	1-163-161-00	CERAMIC MELF 15PF 5% 50V	C225	1-124-259-00	ELECT 4.7MF 20% 50V
C10	1-124-638-11	ELECT 22MF 20% 10V	C226	1-124-259-00	ELECT 4.7MF 20% 50V
C11	1-163-169-00	CERAMIC MELF 33PF 5% 50V	C227	1-163-187-00	CERAMIC MELF 180PF 10% 50V
C12	1-163-169-00	CERAMIC MELF 33PF 5% 50V	C228	1-163-187-00	CERAMIC MELF 180PF 10% 50V
C13	1-131-379-00	TANTALUM 22MF 10% 6.3V	C251	1-130-468-00	FILM 560PF 5% 50V
C14	1-125-486-11	220MF 5.5V	C252	1-130-468-00	FILM 560PF 5% 50V
C15	1-124-225-00	ELECT 100MF 20% 6.3V	C253	1-124-224-00	ELECT 47MF 20% 6.3V
C16	1-124-255-00	ELECT 1MF 20% 50V	C254	1-130-483-00	FILM 0.01MF 5% 50V
C17	1-163-063-00	CERAMIC MELF 0.022MF 25V	C255	1-124-259-00	ELECT 4.7MF 20% 50V
C18	1-162-637-11	CERAMIC CHIP 0.47MF 16V	C275	1-124-259-00	ELECT 4.7MF 20% 50V
C19	1-163-205-00	CERAMIC MELF 0.001MF 10% 50V	C276	1-124-259-00	ELECT 4.7MF 20% 50V
C20	1-163-063-00	CERAMIC MELF 0.022MF 25V	C277	1-163-187-00	CERAMIC MELF 180PF 10% 50V
C21	1-163-063-00	CERAMIC MELF 0.022MF 25V	C278	1-163-187-00	CERAMIC MELF 180PF 10% 50V
C22	1-163-063-00	CERAMIC MELF 0.022MF 25V	C291	1-124-236-00	ELECT 47MF 20% 10V
C23	1-163-063-00	CERAMIC MELF 0.022MF 25V	C293	1-124-462-00	ELECT 10MF 20% 16V
C24	1-163-063-00	CERAMIC MELF 0.022MF 25V	C294	1-124-255-00	ELECT 1MF 20% 50V
C26	1-124-225-00	ELECT 100MF 20% 6.3V	C295	1-124-584-00	ELECT 100MF 20% 10V
C27	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C296	1-163-063-00	CERAMIC MELF 0.022MF 25V
C101	1-124-259-00	ELECT 4.7MF 20% 50V	C301	1-124-259-00	ELECT 4.7MF 20% 50V
C102	1-124-638-11	ELECT 22MF 20% 10V	C302	1-124-259-00	ELECT 4.7MF 20% 50V
C103	1-163-053-00	CERAMIC MELF 0.0033MF 20% 16V	C303	1-130-479-00	MYLAR 0.0047MF 5% 50V
C104	1-130-487-00	MYLAR 0.022MF 5% 50V			
C105	1-124-638-11	ELECT 22MF 20% 10V			
C106	1-124-259-00	ELECT 4.7MF 20% 50V			
C107	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V			

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C304	1-136-173-00	FILM	0.47MF	5%	50V	C463	1-124-247-00	ELECT	10MF	20%	25V
C305	1-136-167-00	FILM	0.15MF	5%	50V	C464	1-124-247-00	ELECT	10MF	20%	25V
C306	1-130-485-00	MYLAR	0.015MF	5%	50V	C465	1-124-259-00	ELECT	4.7MF	20%	50V
C307	1-136-169-00	FILM	0.22MF	5%	50V	C466	1-124-259-00	ELECT	4.7MF	20%	50V
C308	1-130-493-00	MYLAR	0.068MF	5%	50V	C467	1-124-236-00	ELECT	47MF	20%	10V
C309	1-130-491-00	MYLAR	0.047MF	5%	50V	C468	1-124-236-00	ELECT	47MF	20%	10V
C310	1-130-481-00	MYLAR	0.0068MF	5%	50V	C469	1-124-225-00	ELECT	100MF	20%	6.3V
C311	1-130-483-00	MYLAR	0.01MF	5%	50V	C470	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C312	1-124-444-00	ELECT	220MF	20%	10V	C471	1-162-282-31	CERAMIC CHIP	100PF	5%	50V
C351	1-124-259-00	ELECT	4.7MF	20%	50V	C472	1-162-282-31	CERAMIC CHIP	100PF	5%	50V
C352	1-124-259-00	ELECT	4.7MF	20%	50V	C473	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C353	1-130-479-00	MYLAR	0.0047MF	5%	50V	C491	1-124-584-00	ELECT	100MF	20%	10V
C354	1-136-173-00	FILM	0.47MF	5%	50V	C492	1-124-255-00	ELECT	1MF	20%	50V
C355	1-136-167-00	FILM	0.15MF	5%	50V	C701	1-163-063-00	CERAMIC MELF	0.022MF		25V
C356	1-130-485-00	MYLAR	0.015MF	5%	50V	C702	1-163-063-00	CERAMIC MELF	0.022MF		25V
C357	1-136-169-00	FILM	0.22MF	5%	50V	C703	1-163-063-00	CERAMIC MELF	0.022MF		25V
C358	1-130-493-00	MYLAR	0.068MF	5%	50V	C704	1-131-379-00	TANTALUM	22MF	10%	6.3V
C359	1-130-491-00	MYLAR	0.047MF	5%	50V	C705	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C360	1-130-481-00	MYLAR	0.0068MF	5%	50V	C706	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C361	1-130-483-00	MYLAR	0.01MF	5%	50V	C707	1-124-242-00	ELECT	33MF	20%	16V
C362	1-124-444-00	ELECT	220MF	20%	10V	C708	1-124-242-00	ELECT	33MF	20%	16V
C391	1-124-444-00	ELECT	220MF	20%	10V	C709	1-124-463-00	ELECT	0.1MF	20%	50V
C401	1-124-259-00	ELECT	4.7MF	20%	50V	C710	1-124-258-00	ELECT	3.3MF	20%	50V
C402	1-124-259-00	ELECT	4.7MF	20%	50V	C711	1-124-224-00	ELECT	47MF	20%	6.3V
C403	1-136-376-00	FILM	0.0027MF	5%	50V	C712	1-124-255-00	ELECT	1MF	20%	50V
C404	1-136-162-00	FILM	0.056MF	5%	50V	C713	1-124-360-00	ELECT	1000MF	20%	16V
C405	1-136-162-00	FILM	0.056MF	5%	50V	C714	1-163-063-00	CERAMIC MELF	0.022MF		25V
C406	1-124-247-00	ELECT	10MF	20%	25V	C715	1-163-063-00	CERAMIC MELF	0.022MF		25V
C407	1-124-247-00	ELECT	10MF	20%	25V	C901	1-163-163-00	CERAMIC MELF	18PF	5%	50V
C408	1-124-462-00	ELECT	10MF	20%	16V	C902	1-126-103-11	ELECT	470MF	20%	16V
C409	1-124-247-00	ELECT	10MF	20%	25V	C903	1-124-236-00	ELECT	47MF	20%	16V
C410	1-163-215-00	CERAMIC CHIP	0.0027MF	5%	50V	C904	1-124-236-00	ELECT	47MF	20%	10V
C411	1-124-247-00	ELECT	10MF	20%	25V	C905	1-124-444-00	ELECT	220MF	20%	10V
C412	1-124-465-00	ELECT	0.47MF	20%	50V	C971	1-124-255-00	ELECT	1MF	20%	50V
C413	1-124-247-00	ELECT	10MF	20%	25V	C972	1-124-229-00	ELECT	33MF	20%	6.3V
C414	1-124-247-00	ELECT	10MF	20%	25V	C973	1-124-464-11	ELECT	0.22MF	20%	50V
C415	1-124-259-00	ELECT	4.7MF	20%	50V	C974	1-130-483-00	MYLAR	0.01MF	5%	50V
C416	1-124-259-00	ELECT	4.7MF	20%	50V	C975	1-124-252-00	ELECT	0.33MF	20%	50V
C417	1-124-236-00	ELECT	47MF	20%	10V	C976	1-124-245-00	ELECT	4.7MF	20%	35V
C418	1-124-236-00	ELECT	47MF	20%	10V	C977	1-124-229-00	ELECT	33MF	20%	10V
C419	1-124-225-00	ELECT	100MF	20%	6.3V	CN1001	1-559-878-11	CORD (WITH CONNECTOR)			
C420	1-163-181-00	CERAMIC CHIP	100PF	5%	50V	CNJ11	*1-563-464-11	SOCKET, CONNECTOR 10P			
C421	1-162-282-31	CERAMIC CHIP	100PF	5%	50V	CNJ14	1-565-038-11	CONNECTOR, F.P.C 5P			
C422	1-162-282-31	CERAMIC CHIP	100PF	5%	50V	CNP1	*1-506-996-11	PIN, CONNECTOR (PC BOARD) 14P			
C423	1-163-063-00	CERAMIC MELF	0.022MF		25V	CNP2	*1-564-006-51	PIN, CONNECTOR 7P			
C451	1-124-259-00	ELECT	4.7MF	20%	50V	CNP3	*1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P			
C452	1-124-259-00	ELECT	4.7MF	20%	50V	CNP4	*1-566-004-11	PIN, CONNECTOR (PC BOARD) 7P			
C453	1-136-376-00	FILM	0.0027MF	5%	50V	CNP5	*1-564-017-00	PIN, CONNECTOR 7P			
C454	1-136-162-00	FILM	0.056MF	5%	50V	CNP6	*1-566-002-11	PIN, CONNECTOR (PC BOARD) 5P			
C455	1-136-162-00	FILM	0.056MF	5%	50V	CNP7	*1-566-002-11	PIN, CONNECTOR (PC BOARD) 5P			
C456	1-124-247-00	ELECT	10MF	20%	25V	CNP8	*1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P			
C457	1-124-247-00	ELECT	10MF	20%	25V	CNP9	*1-564-001-11	PIN, CONNECTOR 2P			
C458	1-124-247-00	ELECT	10MF	20%	25V	CNP12	*1-564-016-00	PIN, CONNECTOR 6P			
C459	1-124-247-00	ELECT	10MF	20%	25V	CNP13	*1-564-012-00	PIN, CONNECTOR 2P			
C460	1-163-215-00	CERAMIC CHIP	0.0027MF	5%	50V	CNP15	*1-564-015-00	PIN, CONNECTOR 5P			
C461	1-124-247-00	ELECT	10MF	20%	25V						
C462	1-124-465-00	ELECT	0.47MF	20%	50V						

Ref.No.	Part No.	Description
	CNP101*1-563-961-11	SOCKET, CONNECTOR
	CNP201*1-564-013-00	PIN, CONNECTOR 3P
	CNP301*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P
	CNP302*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P
	CNP303*1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P
	CNP304*1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P
	CNP401*1-566-005-11	PIN, CONNECTOR (PC BOARD) 8P
	CNP701*1-506-981-11	PIN, CONNECTOR 10P
	CNP702*1-564-012-00	PIN, CONNECTOR 2P
	CNP901*1-560-894-00	PIN, CONNECTOR 6P
	CNP902*1-564-005-00	PIN, CONNECTOR 6P
	CNP903*1-564-002-00	PIN, CONNECTOR 3P
D1	8-719-110-14	DIODE RD9.1ES-B3
D2	8-719-109-88	DIODE RD5.6ES-B1
D4	8-719-911-19	(US,Canadian)...DIODE 1SS119
D5	8-719-911-19	(US,Canadian)...DIODE 1SS119
D6	8-719-911-19	(US,Canadian)...DIODE 1SS119
D7	8-719-911-19	(US,Canadian)...DIODE 1SS119
D8	8-719-911-19	(AEP,E).....DIODE 1SS119
D9	8-719-911-19	(US,Canadian)...DIODE 1SS119
D10	8-719-911-19	(AEP,E).....DIODE 1SS119
D14	8-719-911-19	(US,Canadian)...DIODE 1SS119
D16	8-719-911-19	(US,Canadian)...DIODE 1SS119
D17	8-719-109-93	DIODE RD6.2ES-B3
D18	8-719-100-05	DIODE 1S2837
D19	8-719-110-14	DIODE RD9.1ES-B3
D20	8-719-911-19	DIODE 1SS119
D21	8-719-109-98	DIODE RD6.8ES-B3
D22	8-719-109-98	DIODE RD6.8ES-B3
D23	8-719-109-98	DIODE RD6.8ES-B3
D24	8-719-109-98	DIODE RD6.8ES-B3
D25	8-719-109-98	DIODE RD6.8ES-B3
D26	8-719-109-84	DIODE RD5.1ES-B1
D27	8-719-109-98	DIODE RD6.8ES-B3
D28	8-719-911-19	DIODE 1SS119
D29	8-719-911-19	DIODE 1SS119
D30	8-719-109-90	DIODE RD5.6ES-B3
D31	8-719-911-19	DIODE 1SS119
D32	8-719-911-19	DIODE 1SS119
D33	8-719-110-09	DIODE RD8.2ES-B3
D34	8-719-911-19	(AEP,E)...DIODE 1SS119
D101	8-719-100-03	DIODE 1S2835
D102	8-719-100-03	DIODE 1S2835
D201	8-719-110-03	DIODE RD7.5ES-B2
D401	8-719-109-74	DIODE RD4.3ES-B1
D451	8-719-109-74	DIODE RD4.3ES-B1
D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D703	8-719-911-19	DIODE 1SS119
D704	8-719-911-19	DIODE 1SS119
D705	8-719-100-05	DIODE 1S2837
D706	8-719-100-05	DIODE 1S2837
D707	8-719-110-21	DIODE RD11ES-B1
D708	8-719-911-19	DIODE 1SS119
D709	8-719-911-19	DIODE 1SS119
D710	8-719-911-19	DIODE 1SS119
D711	8-719-911-19	DIODE 1SS119

Ref.No.	Part No.	Description
D801	8-719-404-22	DIODE LN1451C
D802	8-719-404-22	DIODE LN1451C
D803	8-719-404-22	DIODE LN1451C
D804	8-719-404-22	DIODE LN1451C
D805	8-719-404-22	DIODE LN1451C
D806	8-719-404-22	DIODE LN1451C
D807	8-719-404-22	DIODE LN1451C
D808	8-719-404-22	DIODE LN1451C
D809	8-719-404-22	DIODE LN1451C
D810	8-719-404-22	DIODE LN1451C
D811	8-719-404-22	DIODE LN1451C
D812	8-719-404-22	DIODE LN1451C
D813	8-719-404-22	DIODE LN1451C
D814	8-719-404-22	DIODE LN1451C
D815	8-719-404-22	DIODE LN1451C
D816	8-719-404-22	DIODE LN1451C
D817	8-719-404-22	DIODE LN1451C
D818	8-719-404-22	DIODE LN1451C
D819	8-719-404-22	DIODE LN1451C
D820	8-719-404-22	DIODE LN1451C
D821	8-719-404-22	DIODE LN1451C
D822	8-719-404-22	DIODE LN1451C
D823	8-719-404-22	DIODE LN1451C
D824	8-719-404-22	DIODE LN1451C
D825	8-719-404-22	DIODE LN1451C
D901	8-719-900-95	DIODE V09G
D902	8-719-200-02	DIODE 10E2
D905	8-719-100-54	DIODE RD9.1EB2
D906	8-719-109-80	DIODE RD4.7ES-B1
FE101	1-465-008-21	TUNER UNIT (AM.FM)
HP901	1-543-506-11	HEAD, MAGNETIC (PLAYBACK)
IC1	8-759-803-37	IC LM7001
IC2	8-759-141-XX	IC UPD75108G-640-1B
IC3	8-752-324-40	IC CXK1011P
IC4	8-759-640-45	IC S-8054HN-CB
IC101	1-807-502-11	IC STK3400 (50US)
IC201	8-759-206-48	IC TA7705F
IC202	8-759-100-96	IC UPC4558G2
IC301	8-759-106-23	IC UPD4066BG
IC302	8-752-018-70	IC CX20187
IC401	8-759-106-23	IC UPD4066BG
IC402	8-759-820-15	IC LC7537AN
IC403	8-759-604-56	IC M5228FP
IC404	8-759-604-56	IC M5228FP
IC405	8-759-604-56	IC M5228FP
IC701	8-759-141-11	IC UPD7508HG-609-22
IC702	8-759-106-23	IC UPD4066BG
IC703	8-759-100-96	IC UPC4558G2
IC704	8-759-600-24	IC M54543L
IC901	8-759-100-96	IC UPC4558G2
JR1	1-249-366-11	CARBON MELF 0 5% 1/5W
JR2	1-249-366-11	CARBON MELF 0 5% 1/5W
JR3	1-249-366-11	CARBON MELF 0 5% 1/5W
JR4	1-249-366-11	CARBON MELF 0 5% 1/5W
JR5	1-249-366-11	CARBON MELF 0 5% 1/5W
JR6	1-249-366-11	CARBON MELF 0 5% 1/5W

Ref.No.	Part No.	Description
JR7	1-249-366-11	CARBON MELF 0 5% 1/5W
JR8	1-249-366-11	CARBON MELF 0 5% 1/5W
JR9	1-249-366-11	CARBON MELF 0 5% 1/5W
JR10	1-249-366-11	CARBON MELF 0 5% 1/5W
JR11	1-249-366-11	CARBON MELF 0 5% 1/5W
JR12	1-249-366-11	CARBON MELF 0 5% 1/5W
JR13	1-249-366-11	CARBON MELF 0 5% 1/5W
JR14	1-249-366-11	CARBON MELF 0 5% 1/5W
JR22	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR23	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR24	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR25	1-216-296-00	METAL GLAZE 0 5% 1/8W
JR301	1-249-366-11	CARBON MELF 0 5% 1/5W
JR302	1-249-366-11	CARBON MELF 0 5% 1/5W
JR303	1-249-366-11	CARBON MELF 0 5% 1/5W
JR304	1-249-366-11	CARBON MELF 0 5% 1/5W
JR305	1-249-366-11	CARBON MELF 0 5% 1/5W
JR306	1-249-366-11	CARBON MELF 0 5% 1/5W
JR701	1-249-366-11	CARBON MELF 0 5% 1/5W
JR702	1-249-366-11	CARBON MELF 0 5% 1/5W
JR703	1-249-366-11	CARBON MELF 0 5% 1/5W
JR704	1-249-366-11	CARBON MELF 0 5% 1/5W
JR705	1-249-366-11	CARBON MELF 0 5% 1/5W
JR708	1-249-366-11	CARBON MELF 0 5% 1/5W
JR709	1-249-366-11	CARBON MELF 0 5% 1/5W
JR710	1-249-366-11	CARBON MELF 0 5% 1/5W
JR711	1-249-366-11	CARBON MELF 0 5% 1/5W
JR712	1-249-366-11	CARBON MELF 0 5% 1/5W
JR713	1-249-366-11	CARBON MELF 0 5% 1/5W
JR716	1-249-366-11	CARBON MELF 0 5% 1/5W
JR901	1-249-366-11	CARBON MELF 0 5% 1/5W
JR902	1-249-366-11	CARBON MELF 0 5% 1/5W
JR903	1-249-366-11	CARBON MELF 0 5% 1/5W
JR904	1-249-366-11	CARBON MELF 0 5% 1/5W
JR905	1-249-366-11	CARBON MELF 0 5% 1/5W
JR906	1-249-366-11	CARBON MELF 0 5% 1/5W
JR907	1-249-366-11	CARBON MELF 0 5% 1/5W
JR908	1-249-366-11	CARBON MELF 0 5% 1/5W
JR909	1-249-366-11	CARBON MELF 0 5% 1/5W
JR910	1-249-366-11	CARBON MELF 0 5% 1/5W
JR913	1-249-366-11	CARBON MELF 0 5% 1/5W
JR914	1-249-366-11	CARBON MELF 0 5% 1/5W
L1	1-410-330-11	INDUCTOR 22UH
L2	1-410-336-11	INDUCTOR 220UH
L101	1-410-330-11	INDUCTOR 22UH
L102	1-410-334-11	INDUCTOR 100UH
L103	1-410-316-11	INDUCTOR 1UH
L301	1-235-186-00	ENCAPSULATED COMPONENT
L351	1-235-186-00	ENCAPSULATED COMPONENT
L701	1-410-336-11	INDUCTOR 220UH
L702	1-408-111-00	INDUCTOR 3.3UH
M901	A-3239-951-A	MOTOR SUB ASSY, CAPSTAN
M902	A-3239-956-A	MOTOR SUB ASSY, L
PH11	8-719-939-11	GP2S09-B
PH12	8-719-939-11	GP2S09-B
PM901	1-454-461-11	SOLENOID, PLUNGER

Ref.No.	Part No.	Description
Q1	8-729-271-22	TRANSISTOR 2SC2712G
Q2	8-729-271-22	TRANSISTOR 2SC2712G
Q4	8-729-106-64	TRANSISTOR 2SD1615
Q5	8-729-804-42	TRANSISTOR 2SB1122-T
Q6	8-729-216-21	TRANSISTOR 2SA1162Y
Q7	8-729-900-53	TRANSISTOR DTC114EK
Q8	8-729-216-21	TRANSISTOR 2SA1162Y
Q9	8-729-901-05	TRANSISTOR DTA124EK
Q10	8-729-271-23	TRANSISTOR 2SC2712Y
Q11	8-729-901-01	TRANSISTOR DTC144EK
Q12	8-729-901-05	TRANSISTOR DTA124EK
Q14	8-729-106-64	TRANSISTOR 2SD1615
Q15	8-729-271-23	TRANSISTOR 2SC2712Y
Q16	8-729-900-53	TRANSISTOR DTC114EK
Q17	8-729-901-00	TRANSISTOR DTC124EK
Q18	8-729-106-64	TRANSISTOR 2SD1615
Q19	8-729-271-23	TRANSISTOR 2SC2712Y
Q20	8-729-901-00	TRANSISTOR DTC124EK
Q21	8-729-303-06	TRANSISTOR 2SD1077-B
Q22	8-729-901-00	TRANSISTOR DTC124EK
Q23	8-729-901-04	TRANSISTOR DTA114EK
Q24	8-729-216-21	TRANSISTOR 2SA1162Y
Q101	8-729-271-23	TRANSISTOR 2SC2712Y
Q102	8-729-901-05	TRANSISTOR DTA124EK
Q103	8-729-216-21	TRANSISTOR 2SA1162Y
Q104	8-729-901-00	TRANSISTOR DTC124EK
Q105	8-729-901-05	TRANSISTOR DTA124EK
Q391	8-729-901-01	TRANSISTOR DTC144EK
Q392	8-729-900-53	TRANSISTOR DTC114EK
Q401	8-729-901-05	TRANSISTOR DTA124EK
Q701	8-729-271-23	TRANSISTOR 2SC2712Y
Q702	8-729-271-23	TRANSISTOR 2SC2712Y
Q703	8-729-901-00	TRANSISTOR DTC124EK
Q704	8-729-901-00	TRANSISTOR DTC124EK
Q705	8-729-303-06	TRANSISTOR 2SD1077-B
Q706	8-729-216-21	TRANSISTOR 2SA1162Y
Q707	8-729-271-23	TRANSISTOR 2SC2712Y
Q708	8-729-804-42	TRANSISTOR 2SB1122-T
Q709	8-729-901-00	TRANSISTOR DTC124EK
Q850	8-729-102-04	TRANSISTOR 2SD1020-F
Q860	8-729-102-04	TRANSISTOR 2SD1020-F
Q901	8-729-805-20	TRANSISTOR 2SB1202
Q902	8-729-271-23	TRANSISTOR 2SC2712Y
Q903	8-729-271-23	TRANSISTOR 2SC2712Y
Q910	8-729-804-91	TRANSISTOR 2SD1682-S
Q913	8-729-901-01	TRANSISTOR DTC144EK
Q914	8-729-216-21	TRANSISTOR 2SA1162Y
Q915	8-729-901-00	TRANSISTOR DTC124EK
Q916	8-729-216-21	TRANSISTOR 2SA1162Y
Q950	8-729-102-04	TRANSISTOR 2SD1020-F
Q951	8-729-102-04	TRANSISTOR 2SD1020-F
Q960	8-729-102-04	TRANSISTOR 2SD1020-F
R1	1-249-420-11	CARBON MELF 1.8K 5% 1/5W
R2	1-249-433-11	CARBON MELF 22K 5% 1/5W
R3	1-249-422-11	CARBON MELF 2.7K 5% 1/5W
R4	1-249-417-11	CARBON MELF 1K 5% 1/5W
R6	1-249-417-11	CARBON MELF 1K 5% 1/5W
R7	1-249-416-11	CARBON MELF 820 5% 1/5W

Ref.No.	Part No.	Description
R934	1-249-429-11	CARBON MELF 10K 5% 1/5W
R942	1-249-429-11	CARBON MELF 10K 5% 1/5W
R953	1-249-433-11	CARBON MELF 22K 5% 1/5W
R954	1-249-417-11	CARBON MELF 1K 5% 1/5W
R955	1-249-425-11	CARBON MELF 4.7K 5% 1/5W
R960	1-249-417-11	CARBON MELF 1K 5% 1/5W
R961	1-249-433-11	CARBON MELF 22K 5% 1/5W
R963	1-249-425-11	CARBON MELF 4.7K 5% 1/5W
R971	1-249-437-11	CARBON MELF 47K 5% 1/5W
R972	1-249-437-11	CARBON MELF 47K 5% 1/5W
R973	1-249-431-11	CARBON MELF 15K 5% 1/5W
R974	1-249-435-11	CARBON MELF 33K 5% 1/5W
R975	1-215-493-00	CARBON MELF 1M 5% 1/5W
R976	1-215-493-00	CARBON MELF 1M 5% 1/5W
R977	1-249-414-11	CARBON MELF 560 5% 1/5W
R978	1-249-436-11	CARBON MELF 39K 5% 1/5W
R979	1-249-433-11	CARBON MELF 22K 5% 1/5W
R980	1-249-433-11	CARBON MELF 22K 5% 1/5W
R981	1-249-440-11	CARBON MELF 82K 5% 1/5W
R982	1-249-433-11	CARBON MELF 22K 5% 1/5W
R983	1-249-433-11	CARBON MELF 22K 5% 1/5W
R984	1-249-417-11	CARBON MELF 1K 5% 1/5W
R985	1-249-433-11	CARBON MELF 22K 5% 1/5W
R986	1-249-425-11	CARBON MELF 4.7K 5% 1/5W
R987	1-249-401-11	CARBON MELF 47 5% 1/5W
R988	1-249-409-11	CARBON MELF 220 5% 1/5W
R989	1-249-409-11	CARBON MELF 220 5% 1/5W
R991	1-249-429-11	CARBON MELF 10K 5% 1/5W
RV101	1-230-522-11	RES, ADJ, SOLID 4.7K
RV301	1-228-395-00	RES, ADJ, METAL GLAZE 10K
RV326	1-228-395-00	RES, ADJ, METAL GLAZE 10K
RV351	1-228-395-00	RES, ADJ, METAL GLAZE 10K
RV376	1-228-395-00	RES, ADJ, METAL GLAZE 10K
S1	1-553-510-00	(AEP,E)...SWITCH, SLIDE (9K/10K)
S2	1-570-771-11	SWITCH (POWER)
S10	3-344-155-01	CONTACT (WITH SWITCH)
S11	1-571-138-11	SWITCH, PUSH (1 KEY)(TAPE-IN)
S12	1-571-138-11	SWITCH, PUSH (1 KEY)(F/R)
S801	1-554-813-51	SWITCH, KEY BOARD (OFF)
S802	1-554-813-51	SWITCH, KEY BOARD (LOUD)
S803	1-554-813-51	SWITCH, KEY BOARD (SELECT)
S804	1-554-813-51	SWITCH, KEY BOARD (MUTE)
S805	1-554-813-51	SWITCH, KEY BOARD (LEVEL -)
S806	1-554-813-51	SWITCH, KEY BOARD (LEVEL +)
S807	1-554-813-51	SWITCH, KEY BOARD (1/INTRO)

Ref.No.	Part No.	Description
S808	1-554-813-51	SWITCH, KEY BOARD (4/D.SCAN)
S809	1-554-813-51	SWITCH, KEY BOARD (2/REPEAT)
S810	1-554-813-51	SWITCH, KEY BOARD (5/SHUFF.1)
S811	1-554-813-51	SWITCH, KEY BOARD (3/BL.SKIP)
S812	1-554-813-51	SWITCH, KEY BOARD (6/SHUFF.2)
S813	1-554-813-51	SWITCH, KEY BOARD (SEEK -/REW.AMS)
S814	1-554-813-51	SWITCH, KEY BOARD (MAN -/DISC REW)
S815	1-554-813-41	SWITCH, KEY BOARD (M.SCAN/A.MEM)
S816	1-554-813-51	SWITCH, KEY BOARD (RESET)
S817	1-554-813-51	SWITCH, KEY BOARD (METAL/LOCAL)
S818	1-554-813-51	SWITCH, KEY BOARD (MONO/DOLBY)
S819	1-554-813-51	SWITCH, KEY BOARD (SEEK +/FF.AMS)
S820	1-554-813-51	SWITCH, KEY BOARD (MAN +/DISC FF)
S821	1-554-813-51	SWITCH, KEY BOARD (EJECT)
S822	1-554-813-51	SWITCH, KEY BOARD (TUNER FM/AM)
S823	1-554-813-51	SWITCH, KEY BOARD (CD PLAY,PAUSE)
S824	1-554-813-51	SWITCH, KEY BOARD (TAPE,DIR/PLAY)
SW901	1-571-520-11	SWITCH, SLIDE (6dB/12dB/18dB)
SW902	1-571-521-11	SWITCH, SLIDE (80Hz/120Hz)
X1	1-567-848-11	VIBRATOR, CRYSTAL (7.2MHz)
X2	1-567-170-00	OSCILLATOR, CERAMIC (4.19MHz)
X101	1-567-250-11	OSCILLATOR, CERAMIC
X701	1-567-170-00	OSCILLATOR, CERAMIC (19MHz)

ACCESSORY & PACKING MATERIAL

1-532-419-00	FUSE (3.15A)
2-259-753-00	BAG, PROTECTION
3-302-126-01	SCREW, TAPPING (DIA. 5X20)
3-310-655-01	SUPPORT (ND), FITTING
3-323-208-01	BUSHING, RUBBER
3-323-210-01	ADJUSTOR, STUD BOLT
3-344-556-01	(US).....INDIVIDUAL CARTON
3-344-557-01	(Canadian,E)...INDIVIDUAL CARTON
3-764-951-11	INSTRUCTION, FITTING & CONNECTION
3-764-951-41	(AEP)...INSTRUCTION, FITTING & CONNECTION
3-769-817-11	MANUAL, INSTRUCTION
3-769-817-41	(AEP)...MANUAL, INSTRUCTION
7-682-579-04	SCREW +P 5X20
7-684-025-04	N 5, TYPE 2

Troubleshooting Guide

The following checks will assist in the correction of most problems which you may encounter with your unit.

Before going through the check list below, first refer back to the connection and operating procedures.

Radio reception

Trouble	Cause/Remedy
Preset tuning is not possible.	• Memorize the correct frequency. • The broadcast is weak. → Use manual tuning.
Automatic tuning is not possible.	• The broadcast is weak. → Use manual tuning.
The STEREO indicator flickers.	• Tune in precisely. • The broadcast is weak. → Press the MONO button.

Tape playback

Playback sound is distorted.	• Contamination of the tape head. → Clean the head.
The AMS does not operate correctly.	• There is a noise in the space between selections. • A blank space is too short (less than 4 seconds). • FF is pressed immediately before the following selection. • REW is pressed immediately after the selection starts. • A long pause, or a passage of low frequencies or very low sound level is treated as a blank.

Disc play

No sound	• The unit is in the pause mode.
Playback sound is skipped.	• Dusty or defective disc.

General

No sound	• Control the volume with the LEVEL button. • Set the fader control to the center position on the 2-speaker system.
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About the error displays

The following indicator flickers for about five seconds and alarm sound is heard.

Display	Cause	Remedy
E-01	The disc magazine is not inserted in the CDX-A20.	Insert the disc magazine with discs in it into the CDX-A20.
E-02	No disc is inserted in the disc magazine.	Take out the magazine and insert the discs.
E-04	The disc is dirty.	Clean the disc.
	The disc is inserted upside down.	Insert the disc correctly.
E-99	The CDX-A20 cannot be operated because of some trouble.	Press the reset button of the XR-7200.
WAIT	The temperature is too high and the protection circuit has activated.	Wait till the unit cools off.

XR-7200